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OF

THE MEDICAL SCIENCES.

EDITED BY

O. J. KAUFFMANN, M.D., LOND., M.R.C.P.,

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JAS. W. RUSSELL, M.D., CANTAB., M.R.C.P.

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BIRMINGHAM MEDICAL REVIEW.

JANUARY, 1895.

ORIGINAL COMMUNICATIONS.

THE BRADSHAW LECTURE ON JAMES SYME, REGIUS PROFESSOR OF SURGERY IN THE UNIVERSITY OF EDINBURGH 1833-1869.

A STUDY OF HIS INFLUENCE AND AUTHORITY ON THE SCIENCE AND ART OF SURGERY DURING THAT PERIOD.

Delivered before the Royal College of Surgeons of England on Tuesday, December 11th, 1894.

BY OLIVER PEMBERTON, F.R.C.S. ENG.,
PRESIDENT AND EMERITUS PROFESSOR OF SURGERY
IN MASON COLLEGE, AND CONSULTING SURGEON TO THE BIRMINGHAM
GENERAL HOSPITAL;
MEMBER OF COUNCIL, ROYAL COLLEGE OF SURGEONS OF ENGLAND;
FOREIGN CORRESPONDING MEMBER OF THE SOCIETY OF
SURGERY OF PARIS.

MR. PRESIDENT AND GENTLEMEN,

It is not, I venture to think, an inappropriate fulfilment of the intention of the founder of this lecture that, apart from some special subject of surgical science or practice that might be selected, the consideration of the career of a great surgeon could be chosen as affording material of the highest interest and value. More especially is this the case when it happens that the life in contemplation—that of James Syme—bestowed benefits not only on the country of his birth, but on all countries where human suffering sought relief at the hands of surgery.

Though upwards of twenty years have passed away since the death of Syme, I feel convinced that those amongst us who knew the man and his work, or those who can only learn what he was by his writings, will unite in a judgment that very few in the history of surgery have equalled him in his absolute devotion to his calling, and none have surpassed him in the utility of his practical suggestions for the preservation of the lives and limbs of his fellow-creatures.

If the earlier period during which Syme taught clinical surgery was not so striking in its developments as the later, arising from what followed the discovery of anæsthetics, the application of the antiseptic system, and the use of ligatures antiseptically prepared, it must be borne in mind that the difficulties surrounding the successful practice of surgery at that time were augmented, and demanded the extreme of personal attention. Notwithstanding, Syme overcame them. His self-reliance, sagacity, and fertility of resource were his most assured endowments, and these he cultivated and matured as time went on and gave him experience. It may be truly affirmed that the period covered by Syme's commencement of practice and the resignation of his chair comprehended a period in the advancement of the science and practice of surgery—a space of fifty years unequalled in the history of the profession. To the last his mind was open to the adoption of additional means of simplifying the practice of surgery, and so long as these did not clash with those principles of thought and action which for ever guided him in his calling, he would readily become the staunchest advocate of change.

One cannot trace the career of a great surgeon without dwelling, if only for a moment, on some of the influences that contributed in early days to subsequent eminence. The thorough ascendancy with Syme,* as well as with those who preceded him, rested on the fact that he both learnt and taught anatomy. The foundation of the northern school of surgery,

begun and maintained from the days of John Bell to those of William Fergusson, owed its solidity to this mastery of anatomy. The surgeons of Edinburgh as early as 1505, as provided by the first Charter granted to them, had to examine the applicant for admission to the Incorporation in anatomy, and were to have a body for dissection once a year. This was a beginning culminating in 1694 in the completion of the surgeons' anatomical theatre for dissection, and finally, under Munro's influence, led to the establishment in 1726 of the medical school of the university. It was not yet, however, that surgical anatomy, the only true guide of the operating surgeon, was placed in the front. This was reserved for John Bell, who secured its application by enforcing the practice of dissection.

---

* Historical Sketch of the Edinburgh Anatomical School, Edinburgh, 1867.—Struthers

No truer description of this illustrious man can be given than what is contained in the words of Dr. Struthers: "He was not only a bold and dexterous operator, but combined all the qualities, natural and acquired, of a great surgeon to an extraordinary degree. He was original and fearless, and a thorough anatomist. He had intellect, nerve, and also language—was master alike of head, hand, and tongue or pen, and he was laborious as well as brilliant."

When this master of our craft was passing away in a foreign land,* the subject of my present thought was entering his twenty-first year, and acting as demonstrator of anatomy to Robert Liston, and not yet a Member of his College of Surgeons. Syme's first qualification was M.R.C.S. Eng., 1821, subsequently he had the unique honour of being F.R.C.S. Eng., Edin and Irel.

To speak of the Edinburgh School is to call to mind that famous university which, wherever the English tongue is spoken, cannot fail to be regarded as having ever been pre-eminent in the making of our profession. If in its glorious past it stood well-nigh alone, distancing all competition, it will not, I am prepared to assert, be denied that in the present day, at least in

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[illegible] [illegible] in [illegible] is due to that pre-eminence. I say this without any thought of forgetting our English or our Irish schools, but still the metropolis retains those facilities for conferring degrees adequate to the opportunities for study no less than to the character, the ability, and the thoroughness of the teaching it possesses. I shall not hesitate to regard our attitude towards the great body of the profession in our country as being unworthy of the position we assume, and which we have only to thank apathy and selfishness that it is yet possible to be maintained.

Liston gave up the teaching of anatomy in 1833. Syme took his place, continuing to teach for the next few years until he lectured solely on surgery. By this he attained that absolute confidence, based on anatomy, which he never lost, that speedily led to his successful application of operative surgery to the cure of disease. I have the expectation that when I shall have drawn attention to what he accomplished, and by what means it was brought about, the eulogium I have just quoted as having justly belonged to Bell will equally have been merited by Syme.

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[COPY OF A LETTER FROM PROFESSOR SYME.]

Edinburgh, May 8th, 1856.

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Nothing in what Syme put in practice relating to the treatment of aneurysm affected the general view of the Hunterian operation in the great majority of instances. He argued that there were situations, such as was the case in certain axillary aneurysms, where the application of a ligature to the subclavian on the Hunterian principle promised nothing beyond misfortune; while opening the sac and securing both ends of the ruptured vessel, however difficult and arduous such a proceeding appeared, in his judgment promised, if it did not ensure, a favourable result. The belief that all parts of the artery included in the walls of the sac were unsound seemed to forbid the application of the ligature to any portion of the artery close to it, that being held, in all probability, to be unsound likewise.

Reflection as to the modes in which spontaneous aneurysms most frequently commence and extend satisfied Syme that this need not be the case. Guided by this conviction, in 1857 he successfully treated a traumatic aneurysm of the carotid, too low for proximal ligature, by incision and ligature of both openings at the wound. Thus fortified, he operated on a patient forty-seven years of age on February 1st, 1860, in the

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* Edinburgh Medical and Surgical Journal, 1866, p. 968.

Though upwards of twenty years have passed away since the death of Syme, I feel convinced that those amongst us who knew the man and his work, or those who can only learn what he was by his writings, will unite in a judgment that very few in the history of surgery have equalled him in his absolute devotion to his calling, and none have surpassed him in the utility of his practical suggestions for the preservation of the lives and limbs of his fellow-creatures.

If the earlier period during which Syme taught clinical surgery was not so striking in its developments as the later, arising from what followed the discovery of anæsthetics, the application of the antiseptic system, and the use of ligatures antiseptically prepared, it must be borne in mind that the difficulties surrounding the successful practice of surgery at that time were augmented, and demanded the extreme of personal attention. Notwithstanding, Syme overcame them. His self-reliance, sagacity, and fertility of resource were his most assured endowments, and these he cultivated and matured as time went on and gave him experience. It may be truly affirmed that the period covered by Syme's commencement of practice and the resignation of his chair comprehended a period in the advancement of the science and practice of surgery—a space of fifty years unequalled in the history of the profession. To the last his mind was open to the adoption of additional means of simplifying the practice of surgery, and so long as these did not clash with those principles of thought and action which for ever guided him in his calling, he would readily become the staunchest advocate of change.

One cannot trace the career of a great surgeon without dwelling, if only for a moment, on some of the influences that contributed in early days to subsequent eminence. The thorough ascendancy with Syme,* as well as with those who preceded him, rested on the fact that he both learnt and taught anatomy. The foundation of the northern school of surgery,

begun and maintained from the days of John Bell to those of William Fergusson, owed its solidity to this mastery of anatomy. The surgeons of Edinburgh as early as 1505, as provided by the first Charter granted to them, had to examine the applicant for admission to the Incorporation in anatomy, and were to have a body for dissection once a year. This was a beginning culminating in 1694 in the completion of the surgeons' anatomical theatre for dissection, and finally, under Munro's influence, led to the establishment in 1726 of the medical school of the university. It was not yet, however, that surgical anatomy, the only true guide of the operating surgeon, was placed in the front. This was reserved for John Bell, who secured its application by enforcing the practice of dissection.

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* Historical Sketch of the Edinburgh Anatomical School, Edinburgh, 1867.—Struthers

No truer description of this illustrious man can be given than what is contained in the words of Dr. Struthers: "He was not only a bold and dexterous operator, but combined all the qualities, natural and acquired, of a great surgeon to an extraordinary degree. He was original and fearless, and a thorough anatomist. He had intellect, nerve, and also language—was master alike of head, hand, and tongue or pen, and he was laborious as well as brilliant."

When this master of our craft was passing away in a foreign land,* the subject of my present thought was entering his twenty-first year, and acting as demonstrator of anatomy to Robert Liston, and not yet a Member of his College of Surgeons. Syme's first qualification was M.R.C.S. Eng., 1821, subsequently he had the unique honour of being F.R.C.S. Eng., Edin and Irel.

To speak of the Edinburgh School is to call to mind that famous university which, wherever the English tongue is spoken, cannot fail to be regarded as having ever been pre-eminent in the making of our profession. If in its glorious past it stood well-nigh alone, distancing all competition, it will not, I am prepared to assert, be denied that in the present day, at least in certain respects, it maintains its claim to that pre-eminence. I say this without any thought of forgetting our English or our Irish schools; but until this metropolis obtains those facilities for conferring degrees adequate to the opportunities for study no less than to the character, the ability, and the thoroughness of the teaching it possesses, I shall not hesitate to regard our attitude towards the great body of the profession in our country as being unworthy of the position we assume, and which we have only to thank apathy and selfishness that it is yet possible to be maintained.

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* Aneurysmal Varix, Transactions of the Royal Medical and Chirurgical Society, 1861. Aneurysm, Address in Surgery, British Medical Association, 1872. On ligature of Iliac aneurysms, idem, 1877.

Nothing in what Syme put in practice relating to the treatment of aneurysm affected the general view of the Hunterian operation in the great majority of instances. He argued that there were situations, such as was the case in certain axillary aneurysms, where the application of a ligature to the subclavian on the Hunterian principle promised nothing beyond misfortune; while opening the sac and securing both ends of the ruptured vessel, however difficult and arduous such a proceeding appeared, in his judgment promised, if it did not ensure, a favourable result. The belief that all parts of the artery included in the walls of the sac were unsound seemed to forbid the application of the ligature to any portion of the artery close to it, that being held, in all probability, to be unsound likewise.

Reflection as to the modes in which spontaneous aneurysms most frequently commence and extend satisfied Syme that this need not be the case. Guided by this conviction, in 1857 he successfully treated a traumatic aneurysm of the carotid, too low for proximal ligature, by incision and ligature of both openings at the wound. Thus fortified, he operated on a patient forty-seven years of age on February 1st, 1860, in the case of a large aneurysm situated in the left axilla, evidently a rapidly extending one of the axillary artery. The main difficulty and danger of the operation were overcome by the method in which a command over the artery was obtained before it was tied. This was accomplished by a preliminary incision whereby the finger of the assistant was enabled to pass down to the subclavian as it lay on the first rib on the outside of the scalenus anticus. Then the sac was opened freely and safely and its seven pounds of coagulated blood scooped out. The axillary artery was found to have been probably torn across. Its lower end, bleeding, was first secured, and then the upper end from under a divided lesser pectoral muscle. Complete recovery took place at the end of six weeks.

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* Edinburgh Medical and Surgical Journal, 1866, p. 968.

A further proof of the correctness of the impression that Syme formed—viz., that the extent of an artery either close to or within the sac of an aneurysm is not necessarily unsound beyond the point of rupture, and therefore unfit for ligation—was afforded him in the need to amputate in two instances of axillary aneurysm at the shoulder-joint, the patient's age being fifty-two years in the one case and twenty-two years in the other case. The aneurysms were cut through in the operation, and the arteries tied where they lay within the sac Undisturbed recovery took place in both cases.

In 1861[*] Syme thus treated a gluteal aneurysm. In 1862[†] he yet further corroborated his opinion in a case of iliac aneurysm in which the common—the external and the internal iliac—arteries were tied, and the argument that the size of the tumour does not depend upon the state of the vessel and therefore is not any measure of the extent to which its coats are impaired was again enforced. On April 20th, the aorta being controlled by Professor Lister with a screw clamp, a free incision was made into the sac, six pounds of blood and clot were emptied, the arterial opening into the aneurysm being obscured in its roof, the ligature was applied to this on both sides, and finally to the internal iliac as well. In all these cases the operation effected a cure.

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[*] Transactions of the Royal Medical and Chirurgical Society, 1860.

[†] Ibid., 1862.

I have authority to state that Syme did not use any other material than the "small silk" in his arterial ligatures for aneurysm.

It happened that Sir Joseph Lister in 1869, when about to publish his observations on the ligature of arteries on the antiseptic system, read to Mr. Syme the manuscript in the short interval that preceded his apoplectic seizure in that year. The only alteration suggested was, curiously enough, the introduction of the word "small" before "silk," so impressed was he with the value of a diminutive ligature rather than a large one. As a matter of fact, no case of aneurysm occurred in his practice after the catgut ligature, antiseptically prepared and applied, was introduced. Indeed, the catgut ligature was not ready for him before his illness; but he was quite alive to its importance, and took the keenest interest in an account he had received from Mr. Bickersteth,* of Liverpool—his former house surgeon—of a case in which he had used the catgut with perfect success.

In his treatment dealing with wounds Syme had early the greatest aversion to anything like constriction in their treatment. He went so far as to express an opinion that union by the first intention happened more frequently in the days of Taliacotius than it does at present, for the great, I may say infallible, preventive of adhesion—I mean adhesive plaster—was not then invented. Hence followed his disuse of bandages and the use of compresses of linen. He liked the use of ligatures for the vessels with long ends, leaving the two ends hanging outside the wound, which served, he said, as drains for the pent-up blood and serum.

That he was alive to the value of the "antiseptic method" his contribution to the subject in 1868† affords abundant certain respects, it maintains its claim to that pre-eminence. I say this without any thought of forgetting our English or our Irish schools; but until this metropolis obtains those facilities for conferring degrees adequate to the opportunities for study no less than to the character, the ability, and the thoroughness of the teaching it possesses, I shall not hesitate to regard our attitude towards the great body of the profession in our country as being unworthy of the position we assume, and which we have only to thank apathy and selfishness that it is yet possible to be maintained.

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* Lancet, Vol. I. 1869.

† Brit. Med Jour., Jan. 4th, 1868.

Liston gave up the teaching of anatomy in 1833. Syme took his place, continuing to teach for the next few years until he lectured solely on surgery. By this he attained that absolute confidence, based on anatomy, which he never lost, that speedily led to his successful application of operative surgery to the cure of disease. I have the expectation that when I shall have drawn attention to what he accomplished, and by what means it was brought about, the eulogium I have just quoted as having justly belonged to Bell will equally have been merited by Syme.

In 1828, unconnected with any hospital, Syme performed for the first time in Great Britain the operation of excision of the elbow-joint. I cannot speak on this subject of excision of joints in connection with his name without making a passing reflection on the strange vicissitudes of reputation that dogged the adoption by the profession of the most beneficent operation of the century in which he lived. Parks' suggestion, in his never-to-be-forgotten words of the "total extirpation of the articulation," in his letter to Percival Pott in 1782, as a treatment for diseased joints, led only to its application in the knee, so far as his actual work was concerned, and left to the Moreaus the distinction of carrying it out in the elbow in 1797, just two years previous to the date of Syme's birth. After the Moreaus the whole subject seemed to have slept until revived by Syme, who gave an account of what he had done in the first book he published—namely, a "Treatise on the Excision of Diseased Joints"—in 1831, he then having had an experience of fourteen cases

Undoubtedly to Syme alone belongs the merit of having substituted excision for amputation of the limb in regard to the elbow-joint. He succeeded because, as was ever his wont, he in the first instance established the principle, as alone calculated to secure success in the treatment of caries in joints by excision, that there must be complete cutting or scraping until sound bone was reached. He thus concludes his observations in his earliest record of cases: "The almost forgotten operation of Moreau will now again, perhaps, be reconsidered, and I hope make such a deep impression on the profession as may induce its practitioners to pause before they mutilate a fellow-creature by amputating his arm for disease or injury of the elbow-joint." To this petition, modest and overflowing with humanity, no more fitting judgment can be available than that which has been written down: "If he had done nothing else, he would have been one of the greatest benefactors of the human race." *

The success that attended this proceeding in the elbow led Syme, as time went on, to the belief that it was well to limit its performance to that articulation and the shoulder. As is well known, he dismissed excision of the knee. He tried it. He found the knee did not grow in proportion as compared with its fellow in one instance, and he thought, therefore, an artificial substitute would be more useful than the limb preserved by excision; and this conviction he recorded after the lapse of twenty years from his early experience. Time, however, in this has not verified the correctness of his judgment. Within ten years of its publication our late colleague, Sir William Fergusson, revived the operation of the knee by performing it at King's College Hospital, thereafter following throughout Great Britain, for a good twenty years, the contest between surgeons as to its mode of procedure—a contest ending in the attainment at this time of a well-justified estimate of its value in selected cases in adults and of the adoption of arthrectomy in children.

Fergusson, in dwelling on the period of inaction—in his lectures, delivered in these walls in 1867, on the Progress of

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* Edinburgh Medical and Surgical Journal. 1870.

Anatomy and Surgery, and referring generally to excision of joints—laments the supineness of the English surgeons in language almost pathetic: "Not a breath, not a pen, not a knife stirred in England on the subject." At the same time that he uttered these words, he rendered to Syme the tribute that he recognised as due—that to him, and to him alone, belonged the establishment of the beneficent operation of excision of the elbow-joint when affected by disease or injury.

Though tibio tarsal amputation had been not infrequently performed on the Continent previously to Syme's operation at that joint, it is to him that the profession is indebted for its introduction and perfection in this country. In 1842, on September 8th, the first occasion on which the proceeding was carried out, the new feature which has made the operation what it is was established—that of securing the pad of the heel as the covering of the stump. Neither Velpeau nor Baudens seized this idea. Flaps taken from the dorsum of the foot—from the skin above the heel—resulted in a line of union that exposed an integumental cicatrix alone to bear the pressure in locomotion ; hence arose disappointment and comparative failure. That the pad of the heel retains its thickness after long years of pressure as the medium of support in the stump, and does not become thin and wasted, as in almost every other amputation, no matter where situated or with whatever flaps covered, is universally recognised by surgeons. Well might Syme write* "that he thought that this form of amputation might be advantageously introduced into the practice of surgery, and that he regretted the many limbs that might have been saved by it, and that he would be glad if what he had said in its favour might encourage others to its performance."

In this operation, as in many others that we can readily call to mind, the originator was pestered by the suggestion of so-called improvements. These took the form, in the main, of the question as to the sources whence the coverings of the stump were to be derived. Syme, from the first to the last, always

insisted on the value of the natural pad of the heel constituting undivided in the stump the medium of pressure, in preference to any other covering from the neighbourhood of the joint. The lapse of fifty years has not lessened the value or humanity of this operation, or altered the guidance recorded in the first instance as to the mode of its performance.

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* Edinburgh Medical and Surgical Journal, 1843.

The younger generation of surgeons, with their full knowledge of its excellence, may well wonder at my dwelling on the proceeding with emphatic comment. I cannot, however, forget that when I performed it in the General Hospital, Birmingham, in August, 1853, now forty years ago, it was not even then, eleven years after its introduction, in general adoption, and had not previously been performed in the Midland Counties. I ventured three years later to communicate my experience to Mr. Syme himself,* to me then personally unknown, referring to its applicability to infant deformity, to adult disease as well as to injury. I received from him the following letter, in reading which I tender no apology, as it is not only surgically historical, but it evidences that moderation of tone in alluding to his brilliant proceeding, born, it may be, of some passing disappointment, and yet shewing no trace of want of assurance of ultimate success that is ever the greatest characteristic of genius.

[COPY OF A LETTER FROM PROFESSOR SYME.]

Edinburgh, May 8th, 1856.

My dear Sir.—The results of your experience are very gratifying to me, and will, I hope, tend to lessen the prejudice which still exists against the operation in some quarters. I beg to thank you for the expression of your approbation, which encourages me to persevere in pursuing the great object of my professional life, which is, and always has been, to render some service in improving the practice of surgery.

I remain, my dear Sir, yours very truly,

Oliver Pemberton, Esq. JAMES SYME.

It is with no ordinary feeling of pride that I recall to mind that the reception of this letter led to a friendship, surgical as well as social, that terminated only with life. Moreover, I was then that which I would I were now—a very young hospital

surgeon—whilst the writer was in the zenith of his fame. Beyond this, the circumstance illustrated a marked feature in Syme's character—that of cordially welcoming the younger members of the profession, hailing from any quarter, and discussing with them in social intercourse the story and illustration of the surgeon's art he loved so well

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* On Amputation at the Ankle-joint. Pemberton London, 1856.

No subject has more widely elicited a difference of opinion than the treatment of stricture of the urethra. We are all of us familiar with the views of those who have in the past so variously and strenuously advocated the use of dilatation, of caustics, or of internal incision. After failure with dilatation and internal division in a case which came under Syme's care in 1840, he, for the first time carried out the external division of the stricture; subsequent experience convinced him of the value of the proceeding; and in 1849 he laid his views before the profession. The principles involved in Syme's proceedings I must give you in his own words:* 1. "That there is no stricture truly impermeable, and that with time and care in every case an instrument may be passed through it and serve as a guide for the knife. 2. That all strictures which cannot be remedied by simple dilatation, admit of effectual relief only through a free division of the contracted part of the canal. 3. That this object can be attained with certainty and safety only by an external incision in a line corresponding with the raphe of the perineum upon a grooved director passed through the stricture." The publication of these views gave rise to no ordinary controversy both in this country and in France, the main difference ranging between the advocates of internal as opposed to external division. The lapse of years should enable us to review with calmness this field of contention.

There are certain conditions in connection with stricture to the existence of which hardly any of us will feel inclined to demur. In the first place, let me ask what is the meaning of the word "cure" in stricture? In simple stricture due to inflammation of the lining membrane of the urethra there is the

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* Stricture of the Urethra and Fistula in Perineo. Edinburgh, 1849.

"cure" by dilatation only. In organic stricture, originally simply inflammatory, but becoming aggravated by neglect, or too frequently increased by ill-considered surgical proceedings, there is, properly speaking, no "cure." "Once organic stricture, always organic stricture," is my belief. It is in these cases of organic and permanent stricture, where the induration has become non-dilatable or cartilaginous, or where there is fistula, that Syme's views seem to me to commend themselves to our judgment. Believing, myself, in the permanence of these changes established in the urethra, whether by injury or disease, I have never looked with favour on any internal severance of the lining of the canal. Surely the methods employed to forcibly break up the obstruction are the means of artificially inducing the very conditions which have resulted from other and unavoidable causes; and I regard a shut-up wound in the internal face of the lining of the urethra as being attended by dangers to which an open wound on the outside face is exempt.

For carrying into effect external urethrotomy, there never was in Syme's plan any cutting without a guide; the extent of the obstruction was clearly and completely divided on a grooved staff passed through it in the middle line into the bladder; hence neither hæmorrhage nor extravasation followed. But how about obtaining this guide? Are there no impermeable strictures? In these Syme had no belief. Given time and rest, it was his opinion that no stricture ultimately resisted the passing of an instrument. On this hear his own words: * "I have never either publicly or privately been unable to pass an instrument since I became satisfied that there was no true impermeability." As to this question of non-impermeability, I venture to express my own concurrence, always excepting those of traumatic origin where complete severance of the canal has occurred.† Syme in 108 cases in which he performed external urethrotomy lost only two patients.

And now what conclusions are we entitled to draw from the

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* Op. cit., p. 35.

† On Traumatic destruction of the Urethra. Pemberton, Lancet, 1861.

evidence I have adduced? Proof that Syme originated a treatment of stricture by external division in which treatment by dilatation and other means had failed; that this treatment maintains at this day the value claimed for it by Syme, bringing about a permanent relief from an intolerable and complicated malady—secured in most instances by no subsequent passing of instruments — the exception to this being the need that one might be wanted about once in three months, an undertaking that the patient can easily be instructed to manage for himself.

The study of aneurysm amongst surgeons in all countries has ever been one of deep interest. In Great Britain the names of Hunter and Jones, of Freer and Hodgson, of Syme and Bellingham, will ever be associated with the successful application of treatment for its relief. Here anatomy and pathology have truly been the guides of surgery. It is with diffidence, before an assembly such as this, that I mention that I have myself enjoyed opportunities* of inquiring into the value of various forms of treatment and of investigating some of those pathological changes in arteries and veins that lead to the production of some of the less common forms of the disease. Whilst doing this, however, you will, I trust, believe me when I say that it is for the express object of recalling the occasion in 1872 when, within these walls, Professor Holmes delivered his masterly lectures on the subject, to the illustration of which it was my great privilege to contribute specimens of arterio-venous communications, the results of ligature and pressure in the treatment of aneurysmal formations. These lectures, I need hardly state, gave an impetus that yet endures, and shed a clearer light on the more obscure points connected with their progress and remedy.

This interest is naturally awakened in contemplating Syme's treatment of certain aneurysms of the most formidable character,

in which, had he not deviated on his own initiation from the Hunterian principle that the artery should invariably be ligatured beyond the confines of the tumour, there had been none other ending save disaster and death. That he had a happy touch in dealing with arteries may well be believed, that since he tied the femoral artery thirty-five times with one failure from suppuration of the sac owing to the use of prolonged pressure and consequent derangement of the general health. To tie the femoral artery safely he suggests that the operation is one not of difficulty but nicety. "This nicety consisted in the use of a clean cut to open the sheath of the vessel, first seen lying white and free from surrounding bleeding from little vessels, then the vessel cleared in the same way of its cellular and fatty substance, and the needle can be passed without difficulty or danger."*

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* Aneurysmal Varix, Transactions of the Royal Medical and Chirurgical Society, 1861. Aneurysm, Address in Surgery, British Medical Association, 1872. On ligature of Iliac aneurysms, idem, 1877.

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Reflection as to the modes in which spontaneous aneurysms most frequently commence and extend satisfied Syme that this need not be the case. Guided by this conviction, in 1857 he successfully treated a traumatic aneurysm of the carotid, too low for proximal ligature, by incision and ligature of both openings at the wound. Thus fortified, he operated on a patient forty-seven years of age on February 1st, 1860, in the

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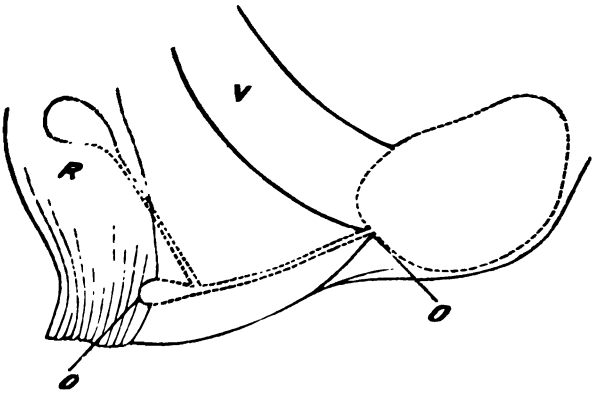
* Edinburgh Medical and Surgical Journal, 1866, p. 968.

The opening of the abscess was enlarged with a scalpel, the upper edge of the [illegible] seized with catch-forceps and this portion of the abscess was cut out with scissors, leaving an opening into which the tip of the finger would pass. No definite lining membrane or sac was found which could be enucleated and removed. The abscess cavity was thoroughly emptied and swabbed out with some iodized phenol.

Consequent on this the swelling of the labium subsided, but no cure was effected. Pus continued to discharge from the same situation as before, and some weeks afterwards, on injection of this sinus, fluid was definitely found to pass into the rectum.

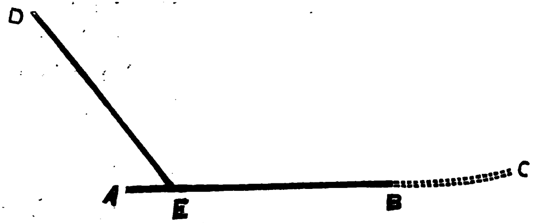
A second examination was therefore made, and the condition found as depicted in the accompanying diagramatic sketch, with the exception that at this stage the labial abscess had healed. (Fig 1.) The opening of a sinus was found in the anterior wall of the rectum just above the sphincter (secondary fistula). This communicated directly with the original hole at the vaginal entrance by a long sinus traversing the entire perinæum. Besides this, a lump was found higher up in the rectum, and towards the right side, communicating with the direct perineal sinus by a distinct ridge or cord (primary sinus).

(Fig. 1)



The following operation was done with the thermo-cautery. (Fig. 2.) First, the main perineal sinus was divided from the rectal orifice for three-fourths of its extent (A B), leaving one-fourth at the vaginal end (B C) undivided, so as to save the perineum if possible. This exposed the orifice of the primary sinus (E). Secondly, a probe was passed from the divided sinus through the primary fistula from E to its globular termination at D, and through the mucous membrane in this situation.

(Fig. 2)



The primary fistula (D E) was then completely divided. There was not much bleeding. A cocaine suppository was placed in the rectum, and the wounds were allowed to heal without the application of any special dressing, "healing by granulation" being ensured by the use of the cautery. From this date there was no further difficulty; the patient made a good recovery.

The course of the disease appears to have been as follows :—

A suppurative peri-proctitis occurred high up forming the abscess cavity at "D." This burrowed as far as the perinæum, and was then deflected forwards to the left labium where the bulk of the pus collected. This was the condition at our first consultation. Later on, a secondary opening formed into the rectum or rather anus, just above the sphincter, and thus completed a direct channel between the anus and vulva as found on operation.

I have frequently had the opportunity of enquiring about the health of this patient and, so far as I can ascertain, she has remained well ever since the operation, and has no incontinence of fæces or impairment of the sphincter. I have not had the opportunity of personally examining the parts since the date of operation.

It occasionally happens, especially amongst patients of consumptive family, that we meet with a subacute or chronic ischio-rectal abscess that has no opening either into the rectum or outwards toward the perinæum or vulva, but may be felt as a resilient, tender, egg-shaped tumour, occupying the fossa at one side of the median raphe and projecting slightly into the rectum at one end and into the vagina or vulva at the other.

The following recent case appears to have been of this description.

Mrs. A. S., aged 30, was sent to me by Dr. Treston on October 29th, 1894. She complained of "swelling and pain on the left side of the front passage." The pain was of a throbbing and burning character, and had kept her awake at night.

On examination, I found a definitely bounded, resilient, oval little tumour somewhat deeply seated in the perinæum to the left of the middle line. Its long axis was antero-posterior, and consequently the ends of the swelling were directed towards the vulva and rectum respectively, and the tumour itself was much more prominent in these situations than externally. It had been forming slowly for nearly two months since the date of a premature confinement which occurred on September 9th. No trace of any opening could be found in the rectum, and the tenseness of the sac precluded the possibility of this. The patient had a consumptive family history, her brother having died of phthisis.

I diagnosed the swelling to be a small abscess resulting from peri-proctitis, and advised a perinæal incision The patient was advised to take cod liver oil.

Such abscesses, like many other strumous affections of considerable severity, may slowly disappear under good hygienic conditions and the administration of cod liver oil, but it is better to evacuate them by a perinæal incision under anæsthesia. I think that a chronic strumous abscess of this kind, when neglected, is far more likely to terminate in a true "stercoro-vulvaire" than is an acute inflammatory abscess, for the latter, even if left alone, will usually open at a reasonable distance from the anal margin.

The question of treatment in a case of true "stercoro-vulvaire" forms a problem of considerable difficulty. When due to cancer of the rectum only palliative measures are admissible unless the cancer of the bowel can be entirely removed. When due to strumous peri-proctitis, while the general constitutional condition must not be neglected, the treatment will be essentially surgical. The abscess or abscesses — and sinuses connected with these — must be laid freely open to effect a cure of the disease, but it is impossible to do this in many cases without danger of lasting injury to the perinæum and sphincter. How can this be avoided? It seems very natural to suppose that these cases of anterior fistulæ in women are the very ones in which it would be wiser to practice complete excision of the fistulous tract or tracts with immediate closure of the wounds by suture.

From my own experience I cannot advise this. Every now and then, after operation for rupture of the perinæum (extending some distance up into the rectum) a little fæcal extravasation occurs at the deepest part of the wound and a fistula forms between rectum and vulva, or rectum and perinæum. I have occasionally tried excision of these and with such poor success that I do not feel inclined to repeat the operation. I have removed the fistulous tract from end to end in one continuous tube without a break, and yet the fistula has slowly re-formed in exactly the same situation as before. It seems to me that for some distance or depth around the fistula there must be infection of the tissues by fæcal germs, and these tend to prevent immediate union after suture, especially in unhealthy subjects.

For this reason I think the operation of freely laying open all fistulæ by the thermo-cautery is much the better. The wound granulates from the bottom and healing of the fistula is a certain thing. Then, if the sphincter and perinæum have suffered in the process, a secondary operation must be performed. A small flap-splitting operation is done at the anal margin. The sphincter is resutured and its function restored. The following diagrams will explain the little operation to any who may not be familiar with its details.

Fig. 3.

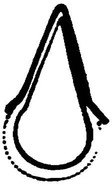
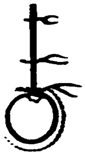


Fig. 4.



The dotted line represents the sphincter. In Fig. 3 we see its free (ununited) ends terminating at the base of an anterior perinæal cleft or angle. The margins of this cleft ***and the ends of the sphincter*** are thoroughly divided just outside the anus by scissors or scalpel. This is represented by the thick black line outside the cleft. The anal mucous membrane (including the anal lining of the cleft) is now turned backwards into the anus, and the raw anterior surfaces are united by sutures of silkworm gut, the suture nearest the re-formed anus deeply and thoroughly coadjusting the ends and completing the circuit of the sphincter muscle (see Fig. 4). The operation is easy, and if properly done the result is eminently satisfactory.

NOTES ON THE USE OF OXYGEN INHALATIONS.*

BY JAMES W. RUSSELL, M.A., M.D. CANTAB., M.R.C.P. LOND.
ASSISTANT PHYSICIAN TO THE BIRMINGHAM GENERAL HOSPITAL.

WHEN I undertook to read a paper before this Society on the subject of the therapeutic use of inhalations of oxygen, I was under the impression that during my period of residence at the General Hospital I had used these inhalations in a large number of cases. I am still under that impression; but unfortunately, when I came to look up the matter, I found that I had lost or destroyed all notes of the cases, and that I was able to recollect but a portion only of the whole number. I am therefore unable to relate my own experience with as much detail as I could wish; but perhaps, as the results at which I arrived were fairly uniform, and are quite defined in my recollection, the absence of such detail is of comparatively slight importance.

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* Read before the Midland Medical Society, April 18th, 1894.

I was led originally to choose this treatment as the subject of my paper mainly because it is one which has come very prominently into notice during the last few years, about which very conflicting statements have been made, and the real value of which in therapeutics remains still to a large extent undecided; not because I have myself a large amount of faith in its efficacy, except under certain special and limited conditions. Such a subject is, I think, a fair and perhaps important one for discussion; and I am the more satisfied to bring it forward, inasmuch as it has not yet been dealt with at any of our societies. The only allusion to it that I have yet heard in this room occurred in Dr. Simon's recent paper on pneumonia, in which, speaking of the various methods which may be adopted for the relief of the "dyspnœa and distress that are symptoms of some cases," he says: "So far as my experience goes, I have never seen more than the most fleeting advantage from the use of oxygen, and, as I feel to-day, shall never use it again;" and it is worth noting that in the long discussion which followed that paper, not one of the speakers even alluded to the subject. With Dr. Simon's opinion of the use of oxygen for the relief of the dyspnœa and distress of pneumonia I am in entire agreement; but I do not think that, when that has been said, the matter has been entirely disposed of.

The theoretical aspect of the question has, I think, received too little attention. Physiological investigations have completely proved, not only that the maximum quantity of oxygen which can be taken up by a given amount of hæmoglobin is a fixed and definite quantity, but that the hæmoglobin of ordinary arterial blood is almost completely saturated with oxygen; and that, even when exposed to that gas under high pressure, a very small additional amount indeed is taken up. That is to say, the partial pressure of the oxygen as it exists under ordinary conditions in the pulmonary alveoli is amply sufficient to cause nearly complete saturation of the hæmoglobin of the venous blood; and simply by increasing the proportion of oxygen, without subjecting it to additional pressure, no increase in the amount absorbed will take place. It is hard to see, therefore, from this point of view, what advantage can possibly be gained by inhaling the gas, so long as the atmospheric air has free access to the lungs, and the blood reaching the pulmonary capillaries is in the condition of ordinary venous blood.

In cases of asphyxia, however, not only is the pulmonary blood more than ordinarily deoxygenated, but the last traces of oxygen in the alveoli of the lungs become used up and replaced by carbonic acid; and it might appear not irrational to suppose that, whilst the oxygen of the atmospheric air is fully capable of meeting the demands of ordinary venous blood, it might fail to supply the extra quantity required under these conditions. This idea is, however, disproved by the following evidence. In October, 1893, there appeared the report of a Committee appointed by the British Medical Association to investigate the suggested usefulness of oxygen inhalations in cases of asphyxial poisoning in coal mines. The conclusions of that report are further amplified by Dr. Ernest Thomson, one of the members of the Committee, who published in the *Glasgow Medical Journal* for Nov. and Dec., 1893, and Jan., 1894, the details of a large number of experiments performed to elucidate this point. These experiments consisted in the artificial asphyxiation of rabbits, followed by their exposure to various gases, including oxygen and atmospheric air. The conclusion arrived at is to the effect that under no conditions is oxygen "one whit more rapid in its restoring action than atmospheric air similarly applied."

These facts in themselves appear to me to afford good reason for receiving with caution the reports which have been published in the medical journals of the good effects of oxygen inhalations in cases of anæmia, cardiac failure, Bright's disease, etc.; and also oblige us to finally abandon any attempt to relieve dyspnœa by means of the super-oxygenation of the blood. I may also note here that they equally dispose of a theoretical objection which has been raised to the treatment generally, on the ground that an increased quantity of oxygen in the air inhaled is likely to lead to an increase in the oxidation of the tissues, and a corresponding accumulation of carbonic acid. This, it is said, may fail to be eliminated, and thus in itself produce a condition of asphyxia. Such an objection is based on the idea that it is possible to overcharge the blood with oxygen, and not upon any practical evidence; and this idea is completely disproved by the foregoing facts.

But, although great doubt is thus thrown upon the possibility of obtaining benefit from the use of oxygen in cardiac, hæmic, and most forms of pulmonary dyspnœa, the evidence does not, I think, apply at all to cases of diminished entry of air into the chest, whether due to obstruction or to failure of the respiratory act. Here, it seems to me that it will obviously be of importance to increase the proportion of oxygen in the air inhaled; for, not only is the total intake of the gas diminished, but there is also probably an increase in the extent of that portion of the pulmonary air which is never actively changed, in which the oxygen becomes renewed by a process of diffusion, and there is always therefore a tendency towards the accumulation of carbonic acid. It is also noted in the report and papers already quoted, that the evidence is not necessarily quite conclusive when applied to cases of pneumonia, in which there is an actual diminution in the extent of the respiratory surface, and the conditions of the problem are therefore altered in an important particular. Dr. Thomson accordingly suggests that, if it be necessary to admit that oxygen is of service in the treatment of pneumonia—which he greatly doubts—the explanation may possibly lie in the partial blocking of the pulmonary capillaries, which he supposes to be the result of the consolidation of pneumonia. This—if we understand him correctly— may, he thinks, cause such a hurrying of the blood through the more healthy parts of the lung, that either the oxygen contained in the alveoli of those parts becomes used up more rapidly than usual, or proper time is not allowed for the necessary interchange between the blood and air; in which case a beneficial effect from the use of oxygen might possibly become intelligible. Dr. Thomson admits the unsatisfactoriness of this explanation; and to my mind the assumption on which it rests—namely, the partial obstruction of the circulation of the consolidated areas, and a correspondingly increased passage of blood through the more healthy parts,—is a doubtful one. Moreover, my own experience of the use of oxygen in pneumonia goes to shew, as I shall have shortly to relate, that it is ordinarily quite powerless to alter either the rate or volume of the respirations, or even to relieve the patient's sense of dyspnœa, and affords no support, therefore, to the idea that a need for a more liberal supply of oxygen is an important factor in the breathlessness of pneumonia.

There appears to me to be another explanation of the occasional good effect of oxygen in pneumonia—in which I firmly believe—which may better meet the requirements of the case. Although, as I have said, my own experience points to the absolute uselessness of oxygen in the treatment of an ordinary case of pneumonia, yet in one instance, in which the patient was comatose, and had been in that condition for some hours, its inhalation certainly produced a most striking effect. It would of course be absurd to base any certain conclusion on a single case, but I may point out that the condition of coma has been present in nearly all the recorded cases of pneumonia in which this treatment has been beneficial; and I may suggest that the shallow and inefficient respiratory movements which are always a marked feature of such cases may possibly fail to introduce a sufficient quantity of air into the lungs to cause the necessary renewal of the oxygen in the pulmonary alveoli; that hence a gradual accumulation of carbonic acid may occur, with a resulting slow asphyxiation; and that the circulation of the imperfectly aerated blood will not only result in coma, but will also impede the heart, and give rise in its turn to those signs of additional cardiac failure on which so much stress has always been laid in the published records. In that case the inhalation of a still diminished *quantity* of air in which the *proportion* of oxygen is increased will necessarily restore the process of blood aeration, and so put an end to the condition of semi-asphyxia, which is acting the part of the proverbial last straw. In this explanation, therefore, the inhalation simply secures the passage into the lungs of the normal amount of oxygen, and the action of the treatment is identical with that which obtains in cases of actual obstruction to the entry of air into the chest.

Whatever be the theory adopted, however, as to the mode of action of these inhalations, there is a considerable mass of clinical evidence in favour of the view that in some morbid conditions they do produce a very distinct effect on the respiratory process. Although used in isolated cases and by isolated practitioners for several years previously, the attention of the profession was first prominently called to this method of treatment in Jan, 1892, by a case of pneumonia reported by Drs. Lauder Brunton and Prickett, in which inhalations of oxygen apparently produced a most striking, though unfortunately only temporary effect. As this case closely resembles in its principal features one which I wish to describe a little further on, I need not quote its details, only pointing out that here also the patient was completely comatose at the time at which the inhalations were commenced. The description of this case was followed by an outbreak in the medical journals of reports of the use of oxygen in all sorts and conditions of respiratory disorder, and it is a matter of some little difficulty to sift these reports so as to arrive at any very clear result from them. Putting aside, for the present all the cases of pneumonia, there would seem to be a considerable mass of clinical evidence to show that oxygen inhalations are useful in relieving the dyspnœa of laryngeal obstruction and possibly of asthma, and in cases where for any reason the respiratory act temporarily fails, as in a case of opium poisoning, reported by Dr. Frederick Taylor, in which the respirations had dropped as low as eight per minute. In all these cases there is deficient entry of air into the chest, and the good effect of the inhalations is therefore quite intelligible There is an almost unanimous agreement, on the other hand, that the inhalations are useless in cases of acute and chronic bronchitis, and broncho-pneumonia; whilst the evidence in favour of their beneficial effect in cases of phthisis is very unsatisfactory. I should like, however, to note in passing that in the only case of acute bronchitis, as far as I have seen, in which a beneficial effect has been recorded, the patient had been comatose for some hours before the inhalations were begun.

Not only, however, has oxygen been used for dyspnœa of pulmonary origin, but it has been given a much more extended trial. Two conditions only need, I think, be mentioned, namely, heart failure from any cause, and anæmia, for both of which the use of oxygen has been extensively and weightily recommended. Of the former, many accounts have been published of cases in which marked improvement and relief has been thought to follow the inhalation of oxygen; and I wish fully to admit that several of these cases are reported with so much definiteness, and sometimes with so much detail, that it is impossible to avoid attaching considerable weight to them. Unfortunately, theoretical considerations entirely fail to account for these phenomena; for in the dyspnœa of cardiac failure, the defect lies entirely in the circulation, and not in the supply of air -that is to say, the required amount of oxygen is forthcoming in abundance, but the blood is unable to get to it. It therefore seems to me that it would be as rational in principle to administer large doses of digitalis for the relief of the dyspnœa of laryngeal obstruction, as it is to use oxygen in the treatment of that of cardiac failure. Nevertheless, if theory turns out to be really opposed to practical experience, it must of course give way; and although my own limited acquaintance with the use of oxygen in these cases affords every reason to doubt its efficiency, I do not wish for a moment to ignore the evidence afforded in its favour by these recorded cases.

Indeed, I may here fully acknowledge that, in the face of adequate clinical experience, a scientific explanation of the working of the remedy, though much to be desired, is not absolutely essential.

In the case of anæmia, the records are much less definite and trustworthy, and seldom contain more than the statement that the patients "greatly improved" under the use of oxygen; no details being given of the direction in which the improvement has manifested itself. Moreover, the insufficiency of the evidence on which in some cases a belief in the efficacy of oxygen has been based is well illustrated by the fact that in not a few of these records the administration of oxygen has been combined with the internal use of iron. In this matter, however, I again have the weight of genuine authority against me; and I may especially quote a statement made by Dr. Frederick Taylor to the effect that he had used oxygen in a case of leucocythæmia, and had never seen such a marked benefit from any other method of treatment—not, however, in itself a necessarily very strong statement. It seems to me that not only do anæmic patients "greatly improve" under other forms of medical treatment, and sometimes even under no drug treatment at all, but that theory is more strongly opposed than ever to a belief in the beneficial effect of oxygen in this disorder; for if the oxygen of the atmospheric air is amply sufficient to cause nearly complete saturation of the hæmoglobin of the blood in health, surely it must still more be able to satisfy the needs of the body in cases in which the amount of hæmoglobin is diminished, and generally very greatly diminished. I am bound to say therefore that, much as I doubt the usefulness of oxygen in cases of heart failure, I am still more sceptical as to its value in the treatment of anæmia.

Coming to my own experience, I am sorry to say that, with the exception of one case only, it by no means supports the favourable opinions formed by many physicians of this treatment. The inhalations were given according to one of two methods. In the majority of the cases, the administration was intermittent, lasting for ten minutes at a time, and being repeated at shorter or longer intervals, according to the nature and severity of the case: in others, it was continued without intermission for a considerable period.

The list of cases (as far as I can recall them) in which the intermittent method of administration was adopted, includes cases of pneumonia, acute and chronic bronchitis, phthisis, mitral disease, aortic disease, aneurism, acute nephritis with uræmic symptoms, and pernicious anæmia, and therefore contains examples of most of the important causes of dyspnœa—pulmonary, cardiac or hæmic. I may sum up my experience of the treatment in all these cases by saying that in not one of them was I able to satisfy myself that any effect, either for good or evil, was produced. In many of the cases I recorded for my own satisfaction the rate of the pulse and respiration before and after the inhalation, and in all I paid attention to these points, and in not one could I detect any definite change in any direction. I do not consider that the dyspnœa, from whatever cause arising, was at all relieved; nor did the patients as a rule express themselves as feeling in any way more comfortable for the treatment, though in a few cases, I think that the imagination was perhaps somewhat impressed by the apparatus used, and that a little corresponding mental relief resulted.

The cases in which the gas was given continuously were only three in number—namely, two of pneumonia, and one of diabetic coma. The latter I may at once dismiss with the statement that no effect whatever was produced, although the subsequent injection of saline fluid did afterwards succeed in rousing the patient to a condition of semi-consciousness for a few moments. The cases of pneumonia include the one instance of benefit from the inhalation of oxygen which I have yet come across, and this benefit was to my mind so remarkable that I may perhaps be allowed to describe the case in detail. The patient, an ill-nourished man, aged 26, was admitted into the General Hospital one day about noon, with a history of nine days' illness, and all the signs of a severe attack of pneumonia. He had kept at work till three days previously, had finally walked some distance to the hospital, and was on admission evidently in a desperate state. Towards midnight of the same day he was becoming very drowsy; and his respirations were described in the notes as being rapid and sighing, and accompanied by much mucous rattling. At 3 a.m. next morning, he was quite unconscious, and the administration of oxygen for the usual 10 or 15 minutes produced no effect. At 9 a.m., he was apparently within an hour of death. He had been entirely unconscious for over six hours; his colour was livid, skin cold and clammy, pulse scarcely to be felt, and respirations shallow and rapid. Remembering the description of Dr. Lauder Brunton's case, I determined to try whether the continuous adminstration of oxygen would by any chance produce any improvement in the condition, though without, I think, the slightest belief in the possibility of such an event. I accordingly gave it without cessation until 10-15 a.m.—that is for an hour and a quarter—at the end of which time, to my great surprise, not only had the colour become good, the sweating ceased, and the pulse become regular and comparatively strong, but the patient sat up, took food, and answered questions rationally. At this point the satisfactory part of the narrative ends. I was called away to another ward, and thinking that the inhalations might now fairly be stopped for a time, made no arrangements for continuing them. I was away for about half an hour, and at the end of that time was disappointed to find that the patient had relapsed into his former condition, in which he died half an hour later in spite of the renewal of the inhalations. Notwithstanding the unsatisfactory ending, I cannot help being greatly impressed by this case; and I think that anyone realising the condition of a pneumonic patient who has been unconscious for more than six hours, and who, as the result shewed, was actually within an hour or so of death, must admit that a method of treatment which can produce a degree of consciousness sufficient to enable the patient to sit up, talk, and take food, is one which cannot be put aside altogether as is resutured and its function restored. The following diagrams will explain the little operation to any who may not be familiar with its details.

Fig. 3.

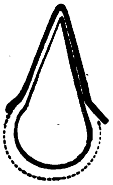
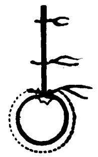


Fig. 4.



The dotted line represents the sphincter. In Fig. 3 we see its free (ununited) ends terminating at the base of an anterior perinæal cleft or angle. The margins of this cleft *and the ends of the sphincter* are thoroughly divided just outside the anus by scissors or scalpel. This is represented by the thick black line outside the cleft. The anal mucous membrane (including the anal lining of the cleft) is now turned backwards into the anus, and the raw anterior surfaces are united by sutures of silkworm gut, the suture nearest the re-formed anus deeply and thoroughly coadjusting the ends and completing the circuit of the sphincter muscle (see Fig. 4). The operation is easy, and if properly done the result is eminently satisfactory.

NOTES ON THE USE OF OXYGEN INHALATIONS.*

BY JAMES W. RUSSELL, M.A., M.D. CANTAB., M.R.C.P. LOND.
ASSISTANT PHYSICIAN TO THE BIRMINGHAM GENERAL HOSPITAL.

When I undertook to read a paper before this Society on the subject of the therapeutic use of inhalations of oxygen, I was under the impression that during my period of residence at the General Hospital I had used these inhalations in a large number of cases. I am still under that impression; but unfortunately, when I came to look up the matter, I found that I had lost or destroyed all notes of the cases, and that I was able to recollect but a portion only of the whole number. I am therefore unable to relate my own experience with as much detail as I could wish; but perhaps, as the results at which I arrived were fairly uniform, and are quite defined in my recollection, the absence of such detail is of comparatively slight importance.

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* Read before the Midland Medical Society, April 18th, 1894.

I was led originally to choose this treatment as the subject of my paper mainly because it is one which has come very prominently into notice during the last few years, about which very conflicting statements have been made, and the real value of which in therapeutics remains still to a large extent undecided; not because I have myself a large amount of faith in its efficacy, except under certain special and limited conditions. Such a subject is, I think, a fair and perhaps important one for discussion; and I am the more satisfied to bring it forward, inasmuch as it has not yet been dealt with at any of our societies. The only allusion to it that I have yet heard in this room occurred in Dr. Simon's recent paper on pneumonia, in which, speaking of the various methods which may be adopted for the relief of the "dyspnœa and distress that are symptoms of some cases," he says: "So far as my experience goes, I have never seen more than the most fleeting advantage from the use of oxygen, and, as I feel to-day, shall never use it again;" and it is worth noting that in the long discussion which followed that paper, not one of the speakers even alluded to the subject. With Dr. Simon's opinion of the use of oxygen for the relief of the dyspnœa and distress of pneumonia I am in entire agreement; but I do not think that, when that has been said, the matter has been entirely disposed of.

The theoretical aspect of the question has, I think, received too little attention. Physiological investigations have completely proved, not only that the maximum quantity of oxygen which can be taken up by a given amount of hæmoglobin is a fixed and definite quantity, but that the hæmoglobin of ordinary arterial blood is almost completely saturated with oxygen; and that, even when exposed to that gas under high pressure, a very this disease. The ten cases of influenza included three of what is commonly known as the gastric type of this disease, a condition which may simulate closely the commencement of typhoid. I have never seen the reaction present in influenza. After typhoid, pulmonary tuberculosis appears to be the disease in which the diazo-reaction is most often met with, more especially if the disease be a miliary tuberculosis, which was the case in the above-quoted single instance in which the reaction appeared. It seems to be generally agreed that the reaction is not given in acute rheumatism. The important point is, that whereas in typhoid the reaction is commonly present and lasts for several days, in other febrile states the reaction is rarely present and probably lasts for one day only.

There is some doubt as to the period of typhoid at which the reaction is first seen. It may certainly be present while the temperature is rising during the first week, and is even described as occurring in afebrile typhoid. The reaction is commonly present during the second week, and may be absent after this, so that failure to obtain it is easily accounted for in many cases, owing to the fact that many typhoid cases are not seen until after the second week. As a rule the reaction reappears during relapse of any severity. The duration of the reaction is very variable—the longest time in the above twenty cases was ten days—the average being four days. Even in bad cases, however, the reaction may only be obtained during two or three days, and in slighter cases for one day only. In the typhoid cases quoted, the urine was examined daily until the patient was well past the febrile period, and in the other diseases during the febrile period only. When once the reaction has disappeared during two or three days it does not reappear, except during relapse.

As regards the value of this reaction as an indication of typhoid fever, there is much difference of opinion. Since Ehrlich first introduced the test, in 1882, there has been extensive writing on the subject, probably the most complete investigations being those of Von Noorden. The general tendency of the most modern writers seems to be to give a guarded opinion in favour of the test, but it is frequently difficult to gather what the observer considers exactly constitutes the full reaction. Of the opponents of the reaction, Von Jaksch makes the most definite statement. He says: "The author's experience would induce him to disclaim for this test any clinical importance whatever, and he would especially enjoin the necessity of avoiding inferences based on the reaction." Here, again, the reaction is not fully stated, and we are left in considerable doubt as to the author's conception of it.

As regards the chemical nature of the reaction nothing very definite is known. Von Noorden believes that the reaction is caused by the action of the diazo-benzene-sulphonic acid on nitrogenous substances the nature of which is unknown. Von Jaksch believes that the reaction is due to the presence of acetone, but he appears to regard the scarlet colour as the full test. I have several times tried the diazo test on diabetic urine which was proved (by Legal's test) to be loaded with acetone, and have always failed, nor can the test for acetone be obtained in urine giving a very marked diazo reaction. Hewetson, writing in the Johns Hopkins Hospital Reports, finds the reaction in 136 out of 196 cases, and quotes Von Noorden as stating that this reaction is "so constantly found in typhoid fever that if it be absent, one must doubt the diagnosis," a statement which is quite in agreement with my limited experience.

REFERENCES.

Von Jaksch : Clinical Diagnosis.
Von Noorden : Lehrbuch der Pathologie des Stoffwechsels.
Hewetson : Johns Hopkins Hospital Reports, Vol. iv., No. 1.

II.—INDICANURIA.

Urinary indican is the potassium salt of indoxyl-sulphuric acid, the antecedent of which is the indol formed in the intestine as the result of albuminous putrefaction.

Indican is present in the urine of typhoid patients to a marked extent from the commencement to the end of the illness; it is probably the latest condition of all to clear up, and I have found indican well marked in the urine of a patient who had left the hospital three weeks back, and who was to all appearances in good health.

From experiment we know that indol is formed—with skatol and other products—as the result of putrefactive pancreatic digestion; it is not a product of pure pancreatic digestion, but of an accompanying decomposition due to the action of bacteria. If experimental pancreatic digestion be performed, the formation of indol can be easily prevented by the addition of thymol or salicylic acid.

Typhoid urine during the febrile stage is typically of a dark brown colour, a colour which is usually associated with the presence of indican, but which it should be remembered is due not to indican, but to higher oxidation products of indol. In performing Jaffé's test for indican, it is not unusual to get—on the addition of the strong hydrochloric acid—a reddish violet colouration, due to the action of the acid on skatoxyl products.

Seeing the ease with which the formation of indol and skatol can be prevented in experimental digestion, it seems reasonable to expect that substances—such as salol—which influence this experimental digestion would have some similar effect in the intestine itself. The only drugs I have had the opportunity of watching have been salol, turpentine, and chlorine solution; but in no instance was any definite effect produced on the excretion of indican. The above drugs were being exhibited in the usual doses—salol, gr. x. or xx., and turpentine, ♏ x. or xx.—every four hours. It is probable that the salol has some antiseptic action in the duodenum, but being rapidly absorbed after decomposition, it could not penetrate to the lower parts of the intestine, where the indol is chiefly formed.

There is not any obvious difference in the extent of indicanuria in the diarrhœa and constipation of typhoid, but the cases in which I found most indican were those of a severe type with constipation. This one would naturally expect, for a large amount of indicanuria would naturally be associated with a great degree of intestinal saprophytic growth; and, as regards the severe type of disease, it is interesting that Armand Ruffer has pointed out that the toxic products of certain saprophytes (the group known as bacillus coli) are able to increase the virulence of typhoid bacilli.

It seemed also possible that excessive indicanuria, or other products associated and absorbed with indican, might have some connection with the anæmia which sometimes follows typhoid fever. Many observers speak of a slight anæmia as being not uncommon in typhoid convalescents, although anything approaching a grave anæmia is decidedly of rare ocurrence. Taking, however, the fifteen cases in the urine of which the indican was most marked, I did not find any definite anæmia. The main blood changes were a slight gradual decrease in red and white corpuscles throughout the disease, with a rapid rise to normal during convalescence, and a similar fall and rise in hæmoglobin, but relatively greater than the corpuscular variation. There was in these cases, therefore, no definite anæmia associated with the extensive and persistent indicanuria. It has however seemed to me that cases in which indicanuria persists into convalescence are more liable than others to the post-typhoid gastric symptoms so frequently seen. One should not call a typhoid patient healthy until the urine is free from indican.

REPORTS OF SOCIETIES.

British Medical Association.

Birmingham and Midland Counties Branch.

The third ordinary meeting of this Branch was held on Thursday, December 13th, Mr. H. Langley Browne, President, in the chair. There were present 46 members.

The following were elected members of the Branch :—H. W. Gardner, M.D., Shrewsbury; T. S. Allan, L.R.C.P., Coventry; H. Fowler, M.D., Bristol road, Birmingham.

A Sub-committee of the Branch was appointed to consider and report on the schemes proposed in connection with the registration of midwives.

A Sub-committee of the Branch was appointed to consider and report upon the Draft Bill to amend the Medical Act submitted by the Parliamentary Bills Committee.

Living Cases.—Mr Albert Lucas showed a man, aged 58, with a cured aneurism of the common femoral artery On July 14th of this year he was kicked in the groin; five weeks later a pulsating swelling appeared. On admission to the General Hospital on September 21st, it was found that he had an aneurism of the common femoral, extending from an inch above Poupart's ligament to nearly the apex of Scarpa's triangle. On October 3rd the external iliac was ligatured by means of an incision higher and more external than Abernethy's. Ballance and Edmunds' "stay knot" was used. Three weeks later some redness was noticed over the front of the leg. This increased, and eventually the anterior tibial muscles sloughed out. On November 9th, amputation of thigh at junction of lower one-fourth with upper three-fourths was performed; muscle flaps. Wounds healed by first intention. Aneurism now quite solid, and not larger than a walnut.

Mr. Lloyd-Owen showed a case of complete removal of eyelids and contents of orbit for rapidly-growing sarcoma within the orbit. To conceal the effects of this extensive operation, Messrs. Salt and Son, of Birmingham, made an eye for the patient, around which they modelled lids and a substitute for a considerable portion of tissue removed, in a species of vulcanite, this artificial portion fitting exactly, and being held in position by attachment to the bows of a suitable pair of spectacles (following an invention for which a patent was obtained some months ago for the construction of artificial eyes for cases of this description), and matching the opposite side of the face in colour and form. The lost expression is thus restored to the subject of an extensive mutilation. This invention is admirably contrived to conceal the deficiency in all cases of patients unable to wear an ordinary artificial eye (owing to shrunken socket, soreness, or other causes), in the majority of which cases artificial lids only require to be moulded, and the concealment is much more simple to effect than in the striking example shewn.

Excision of Epitheliomatous Glands in Neck.—Mr. Barling showed a man, aged 50, from whose lower lip an epithelioma was excised in October, 1890. In March, 1892, a mass of glands, together with the involved sub-maxillary salivary gland, were removed, the sub-maxillary fossa being well cleared out. In June, 1892, there was extensive recurrence reaching from the angle of the jaw to the side of the larynx, and involving the anterior part of the sterno-mastoid muscles. With but little hope of giving permanent relief an extensive dissection was made to extirpate the diseased parts, and at the present time, 2½ years after the last operation, the patient remains well and in robust health.

Mr. Barling read: "A Further Note on the Mortality of Operations for Vesical Calculus," which will later be published.

Mr. Leedham-Green read a paper on "A Method of Restoring Persons Apparently Dead from Chloroform."

PATHOLOGICAL AND CLINICAL SECTION.

November 30th, 1894, Dr. MALINS in the Chair.

Spurious Hermaphroditism.—Mr. Christopher Martin showed a case of spurious hermaphroditism—a person with the external genitals and general characteristics of a woman, but with the essential organs of a man. He was 21 years old, had been brought up as a woman, and had earned his living as a nurse-maid, kitchen-maid, and bar-maid. In February, 1894, he consulted Mr. Martin with reference to a painful swelling in the left inguinal region. Mr. Martin cut down on this and removed a body which proved to be an undoubted testis. The patient's voice was rather low pitched, but not masculine There was no trace of beard, whiskers, or moustache. The breasts were flat and poorly developed. There was no hair on the external genitals. These exactly resembled those of a woman, consisting of labia minora and majora, a vestibule with the meatus urinarius, a *small* clitoris, and a vaginal orifice with the remains of the hymen. The vagina was a blind cul-de-sac 1½ inches long, and there was no trace of a uterus. He made a good recovery from the operation. In September a painful lump formed in the right groin, somewhat similar to that which had appeared on the left, and in October, 1894, Mr. Martin cut down on it and removed what proved to be the right testis. He made an excellent recovery. It is interesting to note that after the first testis was removed hair began to grow on the pubes, and he developed symptoms of hysteria; and after the second was taken away, the breasts became swollen and tender and more fully developed. At the same time he complained of "heats and flushes," which recalled those of the menopause. Mr. Martin showed the two testes and microscopic sections kindly made for him by Prof. Allen.

Anchylosis of Jaw.—Dr. E. N. Nason showed a man, aged 39, who had received an injury to the jaw on the right side some twelve years ago. Two years and a half later, freedom of movement of lower jaw became impared, and some two years later still the teeth could not be separated at all. He remained in this condition for nearly seven years, living on slops as no mastication was possible. An incision was made along the posterior border of the ascending ramus of lower jaw on right side from half an inch below the zygoma to the angle. The bone was freely exposed, cleared, and a wedge (with base posteriorly) removed from the ascending ramus just above the angle. The bone was extremely dense and the division, which was effected by fine saw and cutting bone forceps, was difficult. There was no hæmorrhage from the inferior dental artery, movement was commenced on the third day, and gave very little pain. The patient now, after a year's interval, has excellent masticatory powers.

Avulsion of Finger.—Dr. E. N. Nason showed a finger that had been wrenched off. The finger separated at the middle of the first phalanx and left a most shapely oval flap which covered the stump very nicely. Attached to the avulsed finger were all its tendons and muscles. The extensor communis tendon with small portion of muscle attached to it measured 12 in. There was little hæmorrhage, and the wound healed by first intention.

Case of Mixed Cerebral and Posterior Spinal Sclerosis—Dr. Kauffmann showed a man aged 58, who, when first seen, presented the clinical picture of early general paralysis of the insane, with loss of memory and general stupidity; and a pain across the lower part of the back, extending into the flanks. The left pupil was larger than the right, but the fundi perfectly normal, and the pupils reacted both to light and to accommodation. Within the space of eight weeks he developed an ataxic gait, Romberg's symptom, loss of knee-jerks and increasing weakness of sight, together with the appearance of early atrophy of both optic nerves and the Argyll-Robertson pupil, and presented therefore unequivocal signs of posterior sclerosis of the spinal cord. Points of special interest are the rapidity of the onset of the tabetic symptoms and their sequence upon the mental disturbances.

Chronic Peritonitis.—Dr. Russell showed a case diagnosed as chronic peritonitis of syphilitic origin. The patient, a man, aged 34, was admitted in Aug., 1892, with extreme ascites. There was a history of alcoholism, and the case was thought to be one of cirrhosis of the liver, although no alteration in the size of the liver could be detected. The ascites persisted, needing repeated tappings, until the following January, when a nodule was felt underneath the abdominal wall. Large doses of iodide of potassium were administered, with the result that the nodule gradually disappeared, and the ascites from that time slowly cleared up. The patient was discharged the following June, and shortly afterwards, whilst attending as an out-patient, developed well-marked tertiary syphilitic lesions. Enlargement of the liver can, however, now be made out.

Sarcoma of Testis.—Mr. F. Marsh showed this specimen, admitted on November [illegible] from an [illegible] aet. 38. For six months the left testis had been slowly and uniformly increasing in size without any known cause. There was no history of syphilis, recent gonorrhoea, or injury. The last few weeks a fair amount of pain had been felt. There was no thickening of the cord, nor could any enlargement of glands be detected. A [illegible] of the [illegible] had been tapped some time previous to the swelling of the testis. On section no distinct growth was seen, the testis being uniformly infiltrated by it. A microscopical examination had been made by Dr. Kauffmann, who reported the growth to be a large round-celled sarcoma spreading between the tubules of the testis.

Notes of a Case of Tetanus.—Mr. F. Marsh related the salient points of this case. The patient, a man aet. 45, was admitted into the Queen's Hospital on October [illegible], with a compound dislocation of the left hand outwards, caused by a fall of soil on to the arm. Symptoms of tetanus commenced at 10 a.m. on October 23rd, and as the wound was suppurating and unhealthy, amputation through upper third of the forearm was performed at 4-30 p.m. the same day. The man was isolated in a darkened room, kept absolutely quiet, fed chiefly per rectum, and given frequent doses of chloral hydrate. Some tetanus antitoxin was sent for, but death occurred quite suddenly at 4 p.m. on Oct. 25th from a tetanic spasm of the heart. The amputation wound was healing by primary union. Mr. Leedham-Green had made a cultivation from a portion of tissue taken from the wrist joint immediately after amputation, and demonstrated the presence of the characteristic drumstick tetanus bacillus.

Large Intestine from a case of Dysentery.—Dr. Foxwell showed the large intestine of a well-nourished woman of 32, who had died at the Queen's Hospital under his care with the symptoms of acute dysentery. The health of the patient had been usually good, though all her life attacks of diarrhœa of moderate intensity were easily induced, so that she had to be very careful as to the nature of her food. Eight weeks prior to her death she was seized with a more severe attack than usual, which continued for fourteen days. She then ate some veal for dinner, and the same evening was seized with acute generalised abdominal pain. The next day she kept her bed, vomited several times: the vomit containing some blood. The stools became very watery and dark, contained much blood, and were 15 to 20 in the twenty-four hours. In a day or two they became reduced to 6 or 7 a day, and the vomiting and passage of blood ceased. Her state remained much the same with frequent pain and increasing weakness and emaciation till her admission ten days before her death. Her abdomen was then generally tender, with especial tenderness in the right iliac region, but otherwise nothing abnormal was detected in it. The tongue was large, flabby, glazed, and unduly red. Pulse 120, small, soft, and irregular. Face, worn and drawn. The stools were always small, and consisted of flakes of green mucus, fragments of undigested milk, a few small clots of blood, and, occasionally, an ounce or an ounce and a half of unmixed blood. De-emitinised ipecacuanha, opium, and bismuth had no effect on the diarrhœa: it was thought that the ipecacuanha made her vomit. She sank rather quickly at the close, dying from exhaustion. At the *post mortem*, the heart, lungs, and the whole of the small intestine were quite healthy. The liver, kidneys, and spleen were soft and slightly pale. From the cæcum to two inches from the anus, the large gut was thickly set with clean-edged ulcers, ¼ to ⅓ of an inch in diameter, most of them shallow and all with an acute appearance. The gut was adherent to the left kidney; everywhere it was very soft, and tore repeatedly on being removed. It was generally thickened, and in one or two places somewhat stenosed, but nowhere did this seem to be due to the chronic deposit of fibrous tissue. Though Dr. Foxwell had never previously come across a case of acute dysentery in Birmingham, yet he could give the condition no other name. In all cases of simple ulcerative colitis seen by him *post mortem* the ulcers had been much deeper and larger with densely infiltrated edges and moreover, of greatly varying age; there were evidences also of fibrous deposit. The freedom from congestion of Peyer's patches negatived typhoid.

Glaucoma.—Dr. Sinclair showed for Mr. Eales a man, æt. 47, with absolute glaucoma in one eye, the result of chronic glaucoma of at least six years' standing. The remarkable point about the case being the presence of two large cystic detachments of the uveal pigment layer of the iris. The other eye is normal.

MIDLAND MEDICAL SOCIETY.

The second ordinary meeting of this Society was held on Wednesday evening, November 21st, the President, Mr. T. F. CHAVASSE, in the chair.

Mr. E. Luke Freer showed a case of contraction of fingers with anæsthesia. The patient, a young farmer aged 18, living in Cornwall, fell from a cart six months ago and sustained a fracture of both bones of the forearm, not compound, but the lower fragments were flexed completely upon the upper arm. It was set at once and a bandage applied rather tightly under the splints. He suffered such agony in the middle of the night he had to go to the doctor and have it loosened; no pain afterwards. The anterior splint reached to the tips of the fingers. When taken off, eight weeks afterwards, the fingers immediately became tightly flexed at the first inter-phalangeal joints. Was treated at a hospital by anterior wooden splint with slots, through which the fingers were bandaged to it. In forty-eight hours large sloughs formed over all the joints, and the splint was abandoned. It was found then that there was no feeling beyond the seat of fracture. The limb was then rubbed with liniment for three or four weeks, but no improvement of contractions. The anæsthesia gradually improved, however, and when he came under Mr. Freer's care, on June 5th, he had sensation down to the metacarpo-phalangeal joints, none beyond, and the sloughs over the joints still remained. There was considerable callus thickening over the seat of fracture, the phalanges and wrist rigidly flexed, but fingers extended on the hand (shewn in photograph). Massage, passive manipulations, and Faradisation were used for three months; ulcers

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healed, anæsthesia slightly improved in one or two fingers, no improvement of contractures, callus thickening much less. On September 15th the arm was rendered bloodless by Esmarch bandage, anæsthetic given and an incision made over front of forearm in lower third 4 inches in length, palmaris longus, flexor carpi radialis, and the tendons of the flexor sublimis and profundus divided, the divided ends lightly attached with catgut ligatures (leaving about an inch and a half separation), the wound closed with wire sutures ; iodoform dressing and drainage tube. All the fingers now were fully extended, but they were put up on shaped iron back splint in the original flexed condition. On September 30th the wound was healed ; light manipulations and massage re-commenced, with Faradaic current ; splint re-applied, with elastic finger-stalls for gentle extension. As now seen, the patient's fingers are fully extended, flexion of wrist almost normal, also extension of metacarpo-phalangeal joints less pronounced, anæsthesia less in fingers, but no voluntary power to flex or extend at present beyond wrist; feeling in thumb almost perfect.

Mr. Freer mentioned that the points of special interest were the cause of the anæsthesia, the condition of the nerve trunks, and the prognosis of any attempt at nerve suture which he felt was doubtful, as the nerves were most probably mixed up with the effused callus.

Gouty Concretions.—Dr. Short showed a case of large gouty concretions in the hands of a woman, æt. 50. The swelling of the first metacarpo-phalangeal joint measured 6½ inches in circumference. The first attack of gout had occurred eight years before at the end of twelve months' privation.

Pneumo-thorax.—Dr. Short showed a case of pneumo-thorax of the left side in a man, æt. 49., occurring suddenly during the first week of October of this year. In this case the diaphragm had never been much depressed, and the spleen could not be felt below the margin of the ribs. The patient said that for eleven years he was short of breath on exertion and had had a cough, so that it seemed probable the left lung might have been partially disabled and the diaphragm fixed by adhesions. A cyrtometric tracing showed that the affected side was rather less than the sound side. All the other signs of pneumo-thorax were very well marked. The right lung showed no signs of tubercular deposit, and in spite of the complete absence of vesicular breath sounds over the left side the patient could walk about fairly well, and only experienced dyspnœa on exertion.

Kidney removed by Nephrectomy.—Mr. Chavasse showed a left kidney removed by laparotomy from a boy aged seven. The patient on various occasions had had seven calculi removed from his bladder by median, lateral, and suprapubic lithotomy. In August last, he was admitted into the General Hospital owing to pains in the left side. Aspiration yielding pus, an incision was made in the 9th intercostal space and a drainage tube inserted. In a few days the discharge from the wound was shown to be urine. The fistula showing no signs of closing nephrectomy was performed successfully on November 9th The organ was dilated, cystic, and showed numerous small interstitial abscesses in the existing cortical substance. It contained no calculus.

Umbilical Fæcal Fistula due to patency of Meckel's Diverticulum.—Mr. George Heaton showed the intestines, umbilicus and bladder of an infant with a congenital fæcal fistula. Fæces were first discharged from the umbilicus two days after birth, and from that time till the patient's death when three weeks old, all the child's motions were passed through the abnormal aperture.

The specimen showed an opening at the umbilicus lined by mucous membrane and leading by a short wide canal into the small intestine some 6 or 8 inches from the ileo-cæcal valve. The small intestine above the aperture was much dilated. The large intestine was very much contracted. The cæcum and vermiform appendix lay deeply in the true pelvis attached to the sacrum by a long meso-cæcum, and the ascending colon passed upwards to the left side of the spinal column.

Mr. Heaton regarded it as a patent Meckel's diverticulum which had probably passed through the umbilicus into a dilated umbilical cord, and been ligatured inadvertently by the midwife in attendance.

Dr. Thomas Wilson shewed an ovarian cyst in which axial rotation had given rise to twisting of the pedicle and hæmorrhage into the walls and loculi of the cyst. The walls in the lower part near the pedicle were from one to one and a half inches in thickness; elsewhere a line of hæmorrhage was seen inside the fibrous capsule of the cyst.

Dr. Thomas Wilson read a paper on Axial Rotation of Ovarian Cysts causing twisting of the pedicle. These cases were divided into three groups; the first comprising cases in which no serious pathological or clinical consequences ensue; the second included cases of acute strangulation of cysts due to twisting of their pedicles; and the third those of chronic strangulation and its results. The symptoms, signs, diagnosis, treatment and pathology of each group were described. The causation was then discussed, and referred to purely mechanical factors, the chief being (1) the specific gravity of the tumour, (2) the position of attachment of the pedicle at or near the lowest part of the tumour, and (3) the varying position and conditions of the lowest part of the containing cavity, especially depending on posture, and on variations in the hollow viscera which have a more or less fixed base to act from—viz., the bladder, uterus, cæcum, sigmoid flexure, and rectum. The small intestine transmits abdominal pressure to the surface of the tumour, and helps indirectly to fix it in the lowest part of the cavity available at any moment; but movements of this viscus do not appear to be likely to have any direct influence in producing axial rotation.

REVIEWS.

INEBRIETY OR NARCOMANIA.*

In this ponderous volume of nearly one thousand pages Dr. Kerr endeavours with very indifferent success to prove that inebriety is a disease. That it is so in some cases is extremely probable; but that all inebriates are the victims of a disorder akin to insanity, as Dr. Kerr would have us believe, is certainly not true; and, beyond the probability to which we have just referred, Dr. Kerr's book proves nothing—for the continual reiteration of a statement clothed in different words constitutes no proof that the statement is true. It seems clear that if excessive indulgence in alcohol is to be excused on account of its being a symptom of disease, it is impossible to deny a similar protecting cloak to each and every form of indulgence. With regard to tea, coffee, and tobacco, the author gets out of the difficulty by stating that by inebriety or narcomania he means "that disease which is characterised by an overpowering impulse to intoxication at all risks." (p. 150.) As the force of this sentence turns upon the meaning of the term intoxication, we will give the author's definition of the word:—"I define intoxication as that state in which any person who is affected by an intoxicant, says or does anything which he would not have said or done had he not been under the intoxicating influence." (p. 712.) There is a looseness about any statement based on such a question-begging definition that its value is proportionately diminished as an argument. We quite admit that to decide where disease begins and crime ends is a difficult matter, but we doubt the advisability of pushing the disease theory so far as to excuse the inhuman cruelty of the following case, over the sequel of which Dr. Kerr seems to gloat with keen satisfaction, for he quotes it twice. "The wife of an army sergeant was accused of culpable homicide in that she neglected to supply necessary food and care to her infant boy, through which he died. The evidence showed that the child was in a filthy state, neglected, and ravenously hungry, was in consequence taken from her and was afterwards returned to her. The infant, which was described by the medical attendant as small but healthy at birth, died at the age of six weeks. The medical evidence was to the effect that death ensued from debility and ulceration of the bowels through starvation and neglect. The mother was drunk every day and had an attack of delirium tremens." (p. 649.) The alcoholic view was successful and the verdict was "Not guilty," and the woman was discharged! If this is the kind of legislation that Dr. Kerr is trying to bring about, we fail to see how the public will benefit by its adoption. The weakness of the author's argument is well seen in the following case quoted as an instance of how a wife may worry a husband into inebriety. "Such an unfortunate was Major S., a gallant officer, who commanded the respect and kindness of everyone with whom he came in contact, except the one who ought to have exhibited the most unequivocal marks of both. At 42, he married a lady of some 26 summers, who always looked as if it were the place of the whole world to be continually at her feet, ready to fly and anticipate all her whims. The martyr bore his punishment for some five years in silence, but during the latter half of that time he gradually resorted to the bottle to sooth his suffering. He became a wretched degraded sot." (p. 218.) It is quite clear that in this case the martyr did not commence to drink on account of the pleasure of intoxication as such, but for the peace of mind it at first brought him. Suppose then he had drugged his wife, say with opium, and obtained the peace and quiet in that way, until by gradually increasing the dose he killed her. In each event the original motive of freeing himself from worry remains the same, and whatever the result may be such procedure must not be counted as mental disease in one case, and as crime in the other.

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* Inebriety or Narcomania, its Etiology, Pathology, Treatment and Jurisprudence. By Norman Kerr, M.D., F.L.S. Third Edition. London: H. K. Lewis. 1894.

The greater part of the section dealing with the pathology of inebriety is wordy and extremely vague. Dr. Kerr thinks that it is only those who are possessed of a particular diathesis who respond to the excitation of inebriety. "In what consists this diathesis," he asks, "so potent in its operation, so subtle in its working, which has betrayed to their death so great a company of our fellow-beings? It consists," he answers, "in a deficient tonicity of the cerebral and central nervous system with an accompanying defective inhibition." Of course, after that, the reader knows all about it.

Although the author's arguments, or his methods of handling them, do not convince the reader, the portions of the book dealing more directly with facts will strike him at once as being really good even if somewhat verbose. The descriptions of the various forms of inebriety are full and accurate; and inasmuch as narcomania from even the rarest or out-of-the-way substance is included in this section, it will be valuable as a means of reference. The medico-legal chapters are also interesting, and we can recommend them for thoughtful perusal to everyone whose professional duties bring him in contact with drunkards of any degree. In discussing the "Drunk or Dying" question, Dr. Kerr says: "I have noted two definite discriminating symptoms, temperature and contraction of pupil. The temperature is usually sub-normal in drunkenness, while either normal or super-normal in apoplexy or shock. In intoxication both pupils are contracted; in its absence only one is affected." (p. 710.) Now although these symptoms would probably render assistance in some cases, we do not think that any medical man of experience would consider either of them as definite and discriminating.

Taking it altogether, the book is a great deal too long. Case after case is quoted in the earlier chapters until the reader's attention is quite tired out, and many of the comments are simply repetitions of what has gone before. Condensed into about half the present size, Dr. Kerr's book would be a useful and readable volume.

HERNIA.*

THIS book, of some 200 pages, has many points which deserve to be commended. For the greater part it deals with the palliative and radical treatment of hernia, and we have much praise to bestow upon that portion. The latter part dealing with strangulation is not so well done, and is at times even dangerous. On the whole it does not in any way approach the excellent treatise by Macready. Dr. Manley strongly urges that a child under one year with a small painless hernia and no other complications should not wear a truss, stating that strangulation is rare and almost unknown in infants and young children; a remark which our experience certainly does not justify. It is only too true that a truss on a diapered infant is a great nuisance. He advises that ruptured infants should not be allowed to walk too early, but encouraged to creep, as by doing so the pressure of the abdominal contents is more evenly distributed. The statement that "all herniæ in infancy and early childhood with few exceptions may be cured, in which a properly selected truss is worn," cannot be allowed to pass unchallenged. Herniæ do appear to be cured for a time, but how often they recur sooner or later.

The history of the various operations for radical cure is interesting and complete. We are pleased also that the author does not advise radical cure to be performed on every patient with a hernia, unless there is some particular reason for the operation; remarking, too, on the frequency of recurrence after operation. Speaking of "the essential principles on which all operations for radical cure or surgical treatment of reducible non-strangulated hernia are performed," he says, perfectly correctly, that "the fundamental vital phenomenon indispensable to success, in the majority of hernial infirmities in adults, is local adhesive inflammation, cell proliferation, ultimately undergoing condensation and fibrous sclerosis." Then he goes on to say that "this phase of inflammatory hyperplasia is an active factor in the 'etiology' of hernia, but now it must be excited artificially by the surgeon in all direct operations for the relief or cure of it. In this particular, 'lime' (? time) has brought no change in the therapy of hernia." That inflammatory hyperplasia is an active factor in the ætiology of hernia is surely either a misprint or grossly incorrect. For ligatures and sutures Dr. Manley advises the use of silk, stating that the use of catgut for securing the large vessels of the omentum is needlessly to imperil our patient's life.

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*Hernia: its Palliative and Radical Treatment in Adults, Children and Infants. By J. Lomas H. Manley, A.M., M.D., Visiting Surgeon to Harlem Hospital, Consulting Surgeon to Fordham Hospital, etc. London: F. J. Rebman, 11, Adam Street, Strand.

Another point which deserves notice is the reference to the use of cocaine in herniotomy. The author has quite given up the use of pulmonary anæsthetics when operating upon strangulated hernia. He states that twenty or thirty drops of a 1 per cent. solution of cocaine injected hypodermically in three or four places is sufficient to produce complete anæsthesia in the region to be operated upon. He never employs less than sixty drops or more than a hundred. The analgesia will last about thirty minutes. A good description of the various operations for radical cure is given, and notably of that performed by Bassini.

The last part of the book is devoted to the consideration of Hernia when strangulated. This is the part to which we take exception. We consider the giving of sufficient morphine to secure relief from pain and relaxation of spasm to be most dangerous advice. Deaths from strangulated hernia should be only about 1·5 per cent. if the cases are operated upon early. Surgeons in hospitals are only too frequently called upon to operate when the intestine is gangrenous. The giving of morphine, the leaving a strangulated hernia in men from 24 to 48 hours, and in women 12 hours, the repeated attempts at taxis, as recommended by the author, are to our minds of the utmost danger and cannot be condemned in too strong language. We do not think that in inguinal hernia an incision six inches in length is necessary, nor in many cases need the external and internal oblique muscles be divided. The author advises not one nick of the constriction with a hernia knife, but several small nicks with scissors, urging that by so doing there is less danger of division of the deep epigastric artery or any other abnormal artery. Not much fault can be found with the treatment advised for gangrenous hernia.

POST NASAL GROWTHS.*

A LITTLE book of 96 pages, which is an amplification of a previous paper published in the St. Bartholomew's Hospital Reports for 1894, showing that in cases of post nasal growths respiration is nasal and not buccal during sleep.

Errors of diction occur occasionally, as on page 42—"A child will spring up rapidly;" but there is one error which one can hardly forgive—viz., on page 56—"After hours of obstructed breathing the blood becomes charged with *products of combustion in an unoxidised condition*, etc." As the breathing is chiefly concerned with the interchange of gases, and as oxygen going to the blood combines with its carbon and hydrogen to form CO_2 and H_2O, so it must be a chemical impossibility for the products of combustion to be in an unoxidised condition. If they are supposed to be in an unoxidised condition, then can no oxygen have had access to them, for if it had, then surely would an oxidised condition occur. If the author were speaking of the combustion of a candle, we could understand one of the products of combustion being in an unoxidised condition—viz., carbon; but as the process of respiration has for its *raison d'être* the oxygenation of the blood, we cannot understand why the products of combustion should be in an unoxidised condition.

Page 39 and the following remarks want revision, being based on the same theory.

In the paragraph on the supposed causes of otitis no mention is made of lateral growths as such. These growths are one of the causes of otitis, which usually begins with an otalgia lasting from one to four days at a time. There can be no doubt about these lateral growths, for they have been verified time after time by digital examination.

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* Post Nasal Growths. By Charles A. Parker, Assistant Surgeon to the Hospital for Diseases of the Throat, Golden Square, London. London: H. K. Lewis.

On pages 24 and 57 post nasal growths are mentioned as a symptom, which we presume is a printer's error.

In Chapter 4 the question of diagnosis is given, and Bosworth's method of spraying atomised oils is mentioned as a helpful method. But why take so much trouble when, by the aid of a mirror, the breathing from the two nostrils can be compared, and the quantity and strength of the two currents noted.

In spite of some defects, the book is well worth reading, as it contains much information which should prove valuable to general practitioners and students.

THE SENILE HEART.*

Dr. G. W. Balfour is well known in England as the author of a volume of clinical lectures on diseases of the heart, which ran through several editions and contributed more than any other book to the diffusion of an accurate acquaintance with the modern pathology and diagnosis of cardiac diseases. A score of years must have elapsed since the publication of the book to which we refer, so that we may congratulate our author on his reappearance after so long an interval.

The present volume deals with a somewhat complex subject under the title of the senile heart. Old men have all sorts of hearts, good and bad, strong and weak, fatty, fibroid, atrophic, and hypertrophic; they are subject to various functional derangements of vigour and rhythm, and to alterations of organic perception generally painful or disagreeable. All these changes have been included in Dr. Balfour's subject; our readers will not therefore be surprised if we say that the book is somewhat diffuse and that its chief merit lies in the records of the author's clinical experience and the practical suggestions which he deduces from them.

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* The Senile Heart: its Symptoms, Sequelæ, and Treatment. By George William Balfour, M.D. (St. And.), LL.D. (Edin.) London: Adam and Charles Black. 1894.

The relation of the senile heart to gout, to high living, and want of exercise is clearly pointed out, and the hints on the management of these cases, on their diet and regimen, and on the use of appropriate drugs are extremely valuable. We have also chapters on fatty degeneration, angina pectoris, tachycardia and bradycardia, tremor cordis, etc., and in connection with each of these the same useful features of clear exposition and practical advice are manifested. While we disclaim any intention to endorse all the pathological doctrines which it has pleased Dr. Balfour to propound, we have much pleasure in welcoming this fresh product of his classical pen, and warmly commend it to our readers as the outcome of a wide and liberal culture, long experience, and acute observation.

THE THEORY AND PRACTICE OF MEDICINE.*

In the ninth edition this widely read text-book has been carefully revised and in several places re-written, whilst some valuable additions have been made.

In the preface, Dr. Roberts calls attention to the especial consideration which has been devoted to the subject of Bacteriology; and under the heading of each disease to which a special micro-organism has been assigned as the exciting cause, a short but clear and adequate account of this most important branch of medicine will now be found.

Short sections dealing with the general therapeutics of the various systems of the body have also been added, and will, we think, be of material service in aiding the comprehension of those principles upon which treatment should essentially be based, but which are apt to be missed by the student, and sometimes even by the practitioner of medicine.

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* The Theory and Practice of Medicine. By Frederick T. Roberts, M.D., B.Sc., F.R.C.P., Professor of Materia Medica and Therapeutics. and of Clinical Medicine, at University College; Physician to University College Hospital, etc. Ninth edition. London: H. K. Lewis. 1894.

The book has certainly gained by these improvements, and will continue to hold its acknowledged position as one of the best text-books of medicine for those preparing for the higher examinations.

ON PRESERVATION OF HEALTH IN INDIA.*

THIS little book is a reprint of a lecture delivered some years ago to the students of Cooper's Hill College, who were preparing for the service of the Indian Department of Public Works. It contains a great deal of sensible advice, such as Sir J. Fayrer's long experience enables him to tender with authority, and we know of nothing better to place in the hands of anyone who is going out for the first time to reside in any part of our Indian or tropical possessions. Perhaps a little more intense conviction of the dangers of water and milk as vehicles for the conveyance of infective diseases would have made the author more usefully emphatic on the desirability of sterilising them; but it is something to find an Indian Government official even admitting the possibility of water-borne cholera.

ESSENTIALS OF THE DISEASES OF THE EAR.†

THIS is number twenty-four of Saunders' Question-Compends, and is published with the idea of giving a smattering of knowledge of ear diseases in the shortest possible time. Whether these publications written in question-and-answer form impart real knowledge is a doubtful point; but there is no denying that they are extremely useful occasionally for examination purposes. The responsibility of their production rests not with the authors, nor with the publishers, but with existing examining bodies.

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* On Preservation of Health in India. By Sir J. Fayrer, K.C.S.I., M.D., F.R.S. London: Macmillan and Co. 1894.

† Essentials of the Diseases of the Ear. By E. B. Gleason, S.B., M.B. Philadelphia: W. B. Saunders. 1894.

Dr. Gleason's contribution is full. clear, and accurate. The illustrations are numerous, and including as they do some very useful diagrams will appeal especially to the student.

A HEALTHY HOME.*

THIS is a useful little book and will prove of service to anyone interested in the construction and sanitary arrangements of a house and the best methods of keeping it healthy and clean. A considerable amount of ground is covered, and we think it would have been better economised had less been attempted in the available space. Although intended for readers devoid of technical knowledge, portions of the book are quite beyond the clear comprehension of most people who have not that knowledge. For instance, the paragraphs on the softening of hard water and the methods of ventilating rooms by means of valves and tubes would not convey much real information to readers unacquainted with the subject. The chief difficulty met with in preparing a popular book on a technical subject lies in the fact that the writer is almost compelled to pre-suppose on the part of the reader some slight elementary knowledge, and in many cases even this is absent. On the whole the author has succeeded very well and has produced a book of practical value at a cheap price.

New Books, etc., Received.

Index Catalogue of the Library of the Surgeon-General's Office, United States Army. Vol. XV. Washington: Government Printing Office. 1894.

The Dynamics of Life. By W. R. GOWERS, M.D., F.R.S. An Address delivered before the Medical Society of Manchester. London: J. and A. Churchill. 1894.

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* A Healthy Home. By Francis Vacher. London: Office of the Sanitary Record.

Helps in Sickness and to Health By HENRY C. BURDETT, Author of "Hospitals and Asylums of the World." London : The Scientific Press Limited. 1894.

Urinary Surgery. By E HURRY FENWICK, F.R.C.S., Surgeon to the London Hospital, Surgeon and Pathologist to St. Peter's Hospital for Stone, etc. Illustrated. Bristol : John Wright and Co. 1894.

Diagnosis, Differential Diagnosis and Treatment of Diseases of the Eye. By A. S. ADAMS, M.D., Instructor in Diseases of the Eye in the Post-Graduate Medical College ; Assistant Surgeon to the Manhattan Eye and Ear Hospital. Landon and New York : G. P. Putnam's Sons. 1894.

Atlas of the Anatomy of the Nasal Cavity and its Accessory Sinuses. By DR. A. ONODI. Lecturer on Rhino-Laryngology in the University of Buda-Pest. Translated from the 2nd edition by W. Clive Thomson, M.D., F.R C.S., M.R.C.P. London : H. K. Lewis. 1895.

The Aseptic Treatment of Wounds. By DR. C. SCHIMMELBUSCH. Privat-Docent in Prof. v. Bergmann's University Clinic at Berlin. Translated from the 2nd German edition by Alfred Theodore Rake, M.B., B.S., F.R.C.S., Registrar and Pathologist to the East London Hospital for Children. London : H. K. Lewis. 1894.

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An Introductory Lecture on the Public. the Profession and Medical Charities, delivered at the Middlesex Hospital Medical School at the opening of the Winter Session, Oct. 1, 1894. By ROBERT BOXALL, M.D., M.R.C.P., Assistant Obstetric Physician to the Hospital, and Lecturer on Practical Midwifery at the Middlesex Hospital School. London : H. K. Lewis. 1894.

The Prevention of Smallpox, with special reference to the Origin and Development of the Stamping-out System. By EDGAR M. CROOKSHANK. M.B., J.P., Professor of Comparative Pathology and Bacteriology at King's College, etc. London : H. K. Lewis. 1894.

Diseases and Deformities of the Spine. By RT. SWAN, Surgeon to the Orthopædic Hospital. Dublin : Fannin and Co. 1894.

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THE
BIRMINGHAM MEDICAL REVIEW.
FEBRUARY, 1895.

ORIGINAL COMMUNICATIONS.

THE MIDDLEMORE LECTURE.*

ON OCULAR AFFECTIONS CAUSED BY BLOWS.

BY HENRY EALES, M.R.C.S.
SURGEON TO THE BIRMINGHAM AND MIDLAND EYE HOSPITAL.

Gentlemen,

As I understand the object of the Founder of these lectures, it was that they might be the means of periodically bringing before the Profession such matters in connection with the practice of Ophthalmology as might be presumed to be useful to those engaged in general practice, rather than that they should be a medium for dealing with abstruse, scientific, or disputatious questions of ophthalmology. I feel, therefore, that no apology is required of me for having taken an entirely practical subject for my lecture, such as the Results of Blows: for it seems to me that of all the disorders to which the eye is liable these are the most likely in the first place to come under the care of the practitioner, while upon a due estimate of the injury in the early stage and its proper treatment may depend very greatly the ultimate result to the organ of vision.

I have restricted myself to the results of blows—First, in order not to try and cover too much ground; and Secondly, because I imagine that injuries from wounds to the eyeball are by most considered to be cases that almost invariably call for special advice and assistance, the practitioner hardly caring to undertake the responsibility of cases which for the most part call for some surgical interference, and which are attended with grave danger to the injured eye, and, moreover, involve the terrible risk of loss of the companion eye from that truly awful and uncontrollable disease, sympathetic ophthalmia.

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* Delivered at the Birmingham and Midland Eye Hospital, Dec. 13. 1894.

I have felt the more inclined to deal with this subject because previous Lecturers have not touched on this ground, and because at this Hospital we have, I might say, I think, unsurpassed experience in this domain of ophthalmic surgery.

I propose to deal—*First*, with the result of blows on structures outside the eye, but appertaining to it.

Secondly, on the results to the eyeball itself.

ECCHYMOSIS.

In consequence of the great laxity of the subcutaneous areolar tissue of the eyelids, and of the submucous connective tissue of the conjunctiva, and their very high degree of vascularity, no part of the body is perhaps more liable to ecchymosis after blows than the skin of the eyelids and the conjunctiva; hence the extremely common occurrence of a "black eye," with which, however, it is not necessary that I should deal at any length, the diagnosis is obvious, the prognosis good, and the treatment simple. Ecchymosis of the lids is usually pretty sharply limited to a line corresponding to the margin of the orbit, because the skin is attached to this by rigid connective tissue which prevents the further advance of the blood; it is not uncommon, however, for the blood to travel beneath the skin over the dorsum of the nose to the other side; and hence the common occurrence of ecchymosis affecting both eyes, and giving the impression of both having been injured by the blow. The skin over the nose being thick prevents the ecchymosis over it being seen, and so the connecting link of the ecchymosis on the two sides is not observed.

So too ecchymosis of the conjunctiva is sharply limited at the corneal limbus; because the conjunctiva over the cornea is closely applied to its anterior limiting membrane, without the intervention of any loose submucous connective tissue in which blood could be effused; occasionally, however, there is a very slight transudation of the effused blood elements between the lamellæ of the cornea near the limbus, in consequence of which the iris as seen through this stained area appears muddy, or if the patient is blue-eyed, a peculiar green colour is given to the iris seen through such an effusion.

Proptosis may be caused by effusion of blood also into the cellular tissue of the orbit, and is usually indicative of fracture of its walls.

Ecchymosis of the conjunctiva, which only appears from three to five days after a blow, and then probably just opposite the inner, or more often the outer, commissure, is diagnostic of fracture of the walls of the orbit far back, it may be of the base of the skull, and is therefore a symptom of some gravity, and should always be duly noticed. Its late appearance is due to time being required for it to travel forwards from the site of the original effusion.

In all cases of "black eye" from blows I would emphasise the extreme importance of assuring oneself at the outset that no more serious injury has resulted, and would specially insist that however swollen the lids may be the practitioner should not omit to see and examine the eye itself, even if it should be necessary to administer an anæsthetic for this purpose, otherwise he will run the risk of overlooking some grave injury to the eyeball. Fortunately, the use of cocain, 2 or 4 per cent. as a local anæsthetic, renders a general anæsthetic seldom necessary.

If cannot add to the comfort, or reputation of the practitioner, after treating a case as one of simple "black eye," to find a week later on subsidence of the swelling, that there is a rupture of the eyeball, while the delay in dealing properly with such an injury greatly lessens the chances of such an eye making the best recovery, yet it is by no means unknown to me for such an unfortunate experience to befall the unwary practitioner.

TREATMENT.

In the first place, while there is danger of further hæmorrhage into the tissues, a cold water compress is all that is required—the water being iced in summer. If desirable, and to appease the anxiety of the patient, a simple lotion may be employed for the purpose such as acid boracic ʒiss ad ℥viii., and if there is smarting cocain hydrochlor. gr. i. ad ℥i. may be added to this with advantage; or if necessary a solution of cocain gr. i. ad ʒi. may be dropped into the eye every four hours: this will not only give relief by causing partial anæsthesia of the conjunctiva, but by its powerful effect in lessening hyperæmia of this membrane will make further hæmorrhage under it less likely to occur. It should be borne in mind that such a solution of cocain will dilate the pupil, of which it is wise to inform the patient, to prevent its causing anxiety to him or his friends; but as the ciliary muscle is scarcely affected by cocain, there will be no interference with vision from loss of power of accommodation. After the first two days, when danger from further hæmorrhage is passed, I think warm fomentations are not only grateful to the patient, especially if there is much swelling of the lids, but that they promote the reabsorption of the effused blood.

Ten days to three weeks is about the average time required for all traces of ecchymosis to disappear, though I have known so long a time as seven weeks elapse before this is accomplished.

EMPHYSEMA OF LIDS.

After blows near the eye, specially if accompanied by epistaxis, it is wise to warn the patient against blowing the nose for some days, otherwise it may happen that emphysema of the lids and even of the orbital cellular tissue may take place, causing great alarm to the patient by producing sudden proptosis of the eyeball and great swelling of the lids.

The history of such an occurrence, during the blowing of the nose, or in coughing or sneezing, is sufficient of itself to make a diagnosis, though the condition is readily recognised by the obvious appearance of air vesicles in the lax subcutaneous and submucous tissue, or failing that, by the peculiar crepitation felt on pinching the skin up when also the air vesicles usually approach the surface over the area pinched, even if they have before failed to disclose themselves.

PROGNOSIS AND TREATMENT.

This condition usually subsides in 24 to 48 hours if the patient refrain from further blowing the nose, and causes no bad consequences.

Its chief significance is that it is an absolute sign of fracture of the bones somewhere, causing a communication with the nose, or its accessary cavities the antrum or frontal sinus, and bearing in mind the septic character of the nose, it is remarkable that it is almost never followed by abscess in the tissues; though it is possible that some abscesses following blows may be explained by such a communication with these cavities, though not obviously attended by emphysema.

OTHER RESULTS OF FRACTURE OF BONES.

The best treatment is a pressure bandage after applying a layer of Gamgee tissue to the closed eye. The patient may have his comfort increased, and his anxiety lessened, by using warm fomentations occasionally.

In all cases of blows it is wise to examine by the finger the orbital margin to ascertain if any fracture exists, as is obvious when the border is irregular. or fracture may be diagnosed by a point which is tender to pressure, and occasionally crepitation may be felt at the site of fracture, while by manipulation the border may be somewhat restored.

I once saw a case, some months after the original injury, in which much disfigurement was caused in a young girl by displacement backwards of the whole malar bone from its attachment to the superior maxilla without the zygoma being displaced, and could not but feel that if it had been recognised at the time of injury it might have been replaced by manipulation, at any rate to a great extent, and this deformity avoided.

I have seen numbness and loss of sensation over the whole area of the infra-orbital nerve follow a blow, no doubt due to damage to the nerve, probably from fracture extending into its bony canal near the lower margin of the orbit; such a loss of sensation in the course of five or six weeks usually recovers.

I have also seen epiphora follow a blow from fracture involving the nasal duct. Should this persist after five or six weeks, attempts should be made by opening the canaliculus and passing probes to restore the lumen of the duct.

Occasionally the skin and other tissues are ruptured apparently cut by the sharp edge of the bony wall of the orbit. When this occurs it is best to suture the wound. Such wounds usually heal well.

ABSCESS OF LIDS, ETC.

It sometimes happens that the effused blood becomes the site of an abscess, probably this is more likely if a fracture into the neighbouring air cavities, or an abrasion of the skin occurs, by which septic elements gain admission to the tissues, and if on the 3rd to 5th day after a blow a boggy œdematous swelling of the lids sets in, and the skin becomes tense and shiny, this may be inferred to have taken place.

This should be opened early through the conjunctiva, or through the skin, if it points obviously externally, the incision being made parallel with the orbital margin, as such an incision running parallel with the fibres of the orbicularis gapes the least, while also it corresponds with the folds of the lids, and thus the cicatrix shows the less. If not opened early it may burrow extensively under the fascia of the lids, or into the cellular tissue of the orbit causing proptosis, and further, may cause two or more openings. If necessary, a drainage tube must be inserted. The cavity should be syringed out daily with a suitable lotion. I usually employ 1 to 5,000 hyd. perchlor. By means of Gamgee tissue and a pressure bandage, endeavours should be made to ensure the speedy closing of the cavity.

In some of these cases it will be found that the abscess cavity leads to bare bone. These are the most often found to point in the upper lid near the external angular process, and a probe often discloses some bare bone near this process, though more usually it is the malar bone which is damaged, no doubt in consequence of its being most exposed to injury from blows, which sets up periostitis, and resulting caries and abscess, which may extend to the cellular tissue of the orbit.

These abscesses sometimes cause great disfigurement from the resulting cicatrix becoming adherent to the bone over the carious area, with or without considerable loss of the bony margin of orbit causing the lids to be puckered; those over the malar bone causing the lower lid to be drawn down and often everted (ectropion). It is very important, therefore, that they be opened as early as possible so as to limit the area over which the periosteum becomes separated from the bone by the abscess, and if necessary, a counter opening should be made, and a drainage tube passed through to ensure complete drainage of the cavity.

If ectropion results, this can only be dealt with after a lapse of a suitable time—say twelve months—by some plastic procedure.

Some two years ago a young woman came under my care with an abscess just below the inner end of the eyebrow, over the site of the frontal sinus, with a history that such an abscess occurred after a severe blow on the brow, and had several times formed and been opened by her doctor, only to recur. She suffered much from headache, and had lost the sense of smell in the nostril of the same side. On opening the abscess, the probe passed easily through carious bone into the frontal sinus, and disclosed carious bone extending back over the area of the ethmoid bone in the orbit. By making a free opening and counter-opening and inserting a drainage-tube and keeping it in several weeks, the case was ultimately cured, the abscess cavity closed, the headache disappeared, and the sense of smell returned.

In this case, evidently, the caries of the ethmoid bone had led to damage to the nerve of smell. Some few similar cases have been recorded.

Sometimes fracture leads to closure of the opening of the frontal sinus into the nose, and is soon followed by distension of the sinus and the signs of ordinary frontal abscess. This can only be suitably cured by passing a tube through the opened sinus to the nose.

I pass now to the consideration of symptoms due to injury to the structures far back in the orbit, or it may be even within the cranial cavity.

OPTIC NERVE.

Occasionally, after blows on the head, the patient finds he is immediately blind in one eye. On examination, the following symptoms are found.

1. On looking at the eyes they appear normal externally, and the pupils appear equal.
2. On covering the good eye, the pupil of the blind eye at once dilates.
3. If, while the good eye is covered, the light is alternately admitted and excluded from the blind eye, no contraction and dilatation of the pupil in the blind eye takes place as usual, but the pupil remains all the time dilated.
4. The dilated pupil of the blind eye, however, at once contracts again if the good eye is once more uncovered and light admitted to it.

It might be thought that the ophthalmoscope would at once reveal the cause of blindness, but that is not so, the fundus oculi and the optic disc appearing quite normal on ophthalmoscopic examination of the blind eye. What, then, is the explanation of these symptoms?

In order to understand them we must consider how and why it is that the pupils contract to light in health, and by what paths the impulses travel that bring this about. Let me then, for simplification, consider the effect of light falling on the retina of one eye only—say the right.

The impulse caused by light falling on the right retina is carried by the optic nerve to the brain, where it is transmitted to the centres of both 3rd nerves, and conveyed by both of these back to each eye, there causing contraction of both pupils, the sphincters of which are supplied by this nerve.

Now let us suppose the left optic nerve cut across; in this case, the stimulus of light falling in this eye could not reach the brain, therefore would cause no contraction of the pupil of either this eye or the other; on the other hand, light thrown into the right eye will still reach the brain as explained, and travelling down by the 3rd nerves still cause the pupil in each eye to contract.

Now this is exactly the symptom we have in these cases, which can only be explained by damage to the optic nerve.

The researches of Holder and Berlin have demonstrated that in these cases there is usually a damage to the optic nerve, as it passes through the optic foramen, in consequence of a fissured fracture occurring here, where the bone being very brittle is specially liable to such injury; or a fracture of the orbital roof may extend into the optic foramen. The optic nerve may be completely crushed, or only damaged by effusion of blood into its sheath.

In these cases the blindness is usually permanent and complete; occasionally there is some partial recovery of vision only. Very rarely both optic nerves are involved, but usually only one. I have myself seen many instances in which one eye is thus blinded, but only two in which both eyes were involved, and in one of these both 6th nerves were also paralysed.

As further confirmation that this is the explanation of these cases, I would mention that about the fifth or sixth week after the injury the ophthalmoscope reveals commencing primary atrophy of the optic nerve in the blind eye; the delay of this symptom being due to the fact that time is required for the atrophic process to travel down to the eye and become visible there.

When this is seen, the prognosis is against recovery of vision in the blind eye; but if at the end of eight to ten weeks no such evidence is present, the prognosis as to recovery of some vision is good, as probably the nerve is not permanently damaged.

I have been impressed by the fact that the blow causing such injury has often been not very severe, and unattended by loss of consciousness, or vomiting and other symptoms of serious intra-cranial injury.

No treatment is of any avail to restore vision. An injury which may be mistaken for this, both by the patient and the doctor, is homonymous hemianopsia; but as this is due to a lesion of the brain—often the occipital lobes—it scarcely comes within the province of my lecture. I will, however, briefly allude to it in passing.

HEMIANOPSIA.

In this condition, though the patient often fancies he is blind in one eye, on examination it is found that he is blind in one-half of the F.V. of each eye, no object being seen with either eye on one side—say the right—though discerned directly it has passed the middle line to the left side. This can only be due to a damage to the brain structures behind the chiasma, but may be caused by any lesion anywhere between this and the occipital lobes.

In such cases there is always evidence of severe intra-cranial mischief at the time of injury, and usually more or less prolonged loss of consciousness It may interest you to know that in the case of the woman who jumped from the train between Tamworth and Burton a few years ago, on account of an indecent assault being made on her by an itinerant preacher, who was sent to penal servitude in consequence, this symptom was one of the few from which she did not recover as is usually the case and is accounted for by the fact that there are no commisural fibres between the occipital lobes to enable one to take the function of the other when lost. In this case unconsciousness lasted several weeks I believe, and memory was for long hopelessly at fault, so that only slowly did the facts of the assault come back to her.

PULSATING EXOPHTHALMOS.

Another, though rare, ocular condition resulting from blows on the head is pulsating exophthalmos. Immediately after the injury there is usually a thrumming noise in the head, synchronous with the pulse, with each beat of which the noise reaches its maximum intensity, and which noise is stopped or lessened by compression of the carotid artery of the same side. After a few days the eye becomes somewhat prominent and injected. This increases for four or five weeks. It will be found that, on compression, the proptosed eye can be more or less replaced, but that with each heart-beat there is distinct pulsation of the orbital contents to be seen and felt. A bruit, synchronous with the pulse, may be heard with the stethoscope over the temple or eyebrow. The temporal and angular veins will now be found distended, and in some cases a distinct thrill may be felt in them with each pulsation. The sight of the proptosed eye may be lost from glaucoma, brought about by the turgescence of the ocular veins or from sloughing of the cornea due to its exposure from proptosis. This condition is usually due to rupture of the carotid artery in the cavernous sinus, leading to a communication between this and the cavernous sinus (arterial varix), in consequence of which all the orbital veins too weak to withstand the arterial impulse become distended by the blood pumped into them by the carotid artery, and receive its pulsations.

The rupture of the artery may be caused by the blow, or, as is more usual, by some spicula of bone from fracture in this region perforating the artery. Occasionally the injury simply causes thrombosis in the sinus, with consequent distension of the orbital veins entering into it, to which the pulsations of the carotid artery are transmitted.

There is one sign, however, by which a rupture of the artery and consequent arterial varix may be certainly diagnosed, that is when there is a distinct thrill to be felt in the distended veins seen around the orbit. In some few rare cases a traumatic aneurism of the ophthalmic artery in the orbit has been found to be the cause of this condition.

PROGNOSIS.

There is danger to life from the orbital vessels giving way, and causing fatal hæmorrhage; though cases in which this condition has lasted twenty years or so without this catastrophe are on record.

TREATMENT.

Very rarely this condition undergoes a spontaneous cure after a time—of this I have myself recorded one example. Less rarely, but very exceptionally, it is cured by rest in bed with compression of the carotid artery, accompanied by iced compresses, and perhaps aided by the internal administration of potass. iodide. Ligature of the carotid artery is the most satisfactory and proper means of cure, and is generally successful, though cases are on record which have defied ligature of one carotid artery, followed by ligature subsequently of the second carotid. Bearing in mind the nature of the affection as an arterial varix of the cavernous sinus, and the free communication between the cavernous sinuses on the two sides, it is not surprising that occasionally a pulsating exophthalmos on one side is soon followed by a similar condition of the opposite eye.

As an illustration of how several different lesions may occur in the same patient from the same injury, I may say I have seen a pulsating exophthalmos on the left side, accompanied by complete blindness on the other side from atrophy of the optic nerve, produced as I have just previously explained.

Before passing to the next part of my lecture I wish to say that paralyses of the various nerves entering the orbit are often caused by blows on the head, and no doubt generally indicate some fracture of the base of the skull; they are often associated with paralysis of the facial and auditory nerves. As in disease, so from injury, paralysis of the sixth is by far the most common, no doubt in consequence of its more intimate contact with the bone, lying as it does in the floor of the cavernous sinus; while the other nerves pass through the outer fibrous wall—*it is often double.*

These injuries are usually easily diagnosed by the paralysis of the ocular muscles being apparent; or failing that, by the presence of diplopia. A careful examination of the diplopia will disclose what muscle is at fault. The nerves may be injured as they pass through the sphenoidal fissure into the orbit, or in the orbit itself.

Paralysis of the superior oblique is sometimes caused by injury to its pulley, of which I have had a recent example; but this is more likely to occur, as in my case, from wounds, than from a blow.

As these various paralyses were fully dealt with in the Middlemore lecture given by my colleague, Mr. Wood White,* I do not propose to do more than remind you that blows are a common cause of such affections, as time would not permit of my going into the intricacies of ocular palsy.

(To be continued.)

ON SOME OF THE LESS COMMON DISEASES OF THE VULVA.

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SURGEON TO THE BIRMINGHAM AND MIDLAND HOSPITAL FOR WOMEN.

(Continued from page 26).

V.—WARTS OF THE LABIA.

(*a*) GONORRHŒAL WARTS

("Papilloma," "Vegetations," "Pointed Condyloma," "Oozing Tumour").

It is unfortunate that there is still but little agreement among authors as to the nomenclature of this affection, for in its advanced stages it forms a very definite and striking disease of the female genitals.

The disease is always (?) associated with chronic gonorrhœa, and is essentially one of early adult life. It commences insidiously by the formation of a few scattered pointed outgrowths of the skin near the vaginal entrance—hypertrophied papillæ or warts. These cause no pain or inconvenience to the careless patient; and, in spite of the fact that they tend to increase in number and size as time goes on, the condition too often is absolutely neglected. Finally, the disease results in an extensive cauliflower-like growth, or tumour, which may be as large as a child's head (Schroeder), and covers the labia and perineum (as the cauliflower covers the stalk), extending even to the anus, completely filling the space between the thighs, and preventing free movement. Now the opposing masses of papilloma become sore and raw; the patient is unable to work; she cannot even walk except with difficulty, and is absolutely forced to seek for treatment.

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* *Birmingham Medical Review*, March, 1892.

The outline of the growth is irregularly festooned or bunched; the surface is convex, minutely lobulated or granular in the centre, and minutely pointed at the edges; its colour is pale red. On forcible touch, it breaks with a somewhat crumbling fracture, and the consequent bleeding is marked and difficult to control except by pressure. The granulations of the surface, which at first look as if evenly disposed on a common base, are seen, on closer examination, to be divided into lobules, but the division is obscured by the pressure of the growth. From the surface thus formed, a thin watery discharge exudes, of exceedingly fœtid smell, hardly to be distinguished from that of advanced malignant disease. This smell is so objectionable and penetrating that the patient becomes loathsome to her companions and neighbours, and hospital patients in adjoining beds will complain of having to remain near such a case so long as the tumour is present.

Some writers have held, rather loosely, that any irritating discharges may cause the disease, but I have never met with it apart from gonorrhœa, and believe that gonorrhœal infection is an essential factor in its production. Most modern authors hold or tend to hold this opinion. Dr. Mann writes:—"It is nearly certain that the presence of an irritating discharge, without the specific cause of this disease, is not enough to cause the formation of the growths. Further experimentation and observation is necessary to place this among the accepted facts, but enough has been done to render it all but settled. Germs, the gonococci of Neisser, have been found in the growths themselves and in the discharges accompanying them."

But while gonorrhœa is the essential cause, it is highly probable that very prolonged contact of the infective discharge is necessary for the production of these growths, and that want of cleanliness is an important accessory cause. The disease is the product of gonorrhœa and neglect, and the result of this is occasionally so horrible that anyone who sees the disease for the first time in its full development may well be astonished that so extensive, malignant-like, and foul a tumour can yet be so simple in its origin, so "innocent" in its nature, and so easily and permanently cured.

Two excellent illustrations of this disease are to be found in our text-books of Gynæcology—the one in Professor Pozzi's Traité de Gynécologie (p. 1,014), under the name of "Vegetations Simples," and the other in Emmet's Gynæcology (1880, p. 602), under the title of "Oozing Tumour of the Labia." Both of these drawings are so good that I would rather refer the reader to them than attempt any sketch of my own.

Dr. Emmet, who was one of the first to describe the advanced stage of this disease (under the name of "Oozing Tumour"), writes:—"This is an irregular papillary or cauliflower-like growth springing from one or both labia, the prominent feature being a profuse acrid and watery discharge which is exceedingly offensive. It is supposed to be due to a want of cleanliness, and may occur at any age." (?) In describing a case which occurred in a patient aged 16, he adds:—"The growth could be separated by the fingers into distinct lobes, each springing from a separate pedicle, but branching out so as to present on the surface a continuous growth, like the fastigiate cymes of certain umbelliferous plants, and filling the whole space between the thighs. On a careful examination, separate papillæ could be distinguished, about one-third of an inch in length, and all closely packed together."

In my own cases of the advanced disease—some five or six in number—all of the patients were young (under 30 years of age), and all had history or strong presumptive evidence of gonorrhœal infection. The colour of the vegetations or tumour-surface was red as compared with the surrounding skin, and the growths stopped rather abruptly at the vulvo-vaginal margin. In one case an offshoot or tongue of warty growths extended for some little distance on the posterior vaginal wall, but in the other cases the vagina—or the further side of the hymen—was found to be free from the disease.*

When acting-surgeon to the Skin and Lock Hospital, some years ago, I frequently met with cases of gonorrhœal warts in the male subject, but in only one case have I ever seen any development of this in a man at all commensurate with that which I have described as occurring in the female. In this case the penis was absolutely buried in a mass of vegetations, and it was only by a careful and most tedious dissection that a cure was effected.

The treatment consists in the removal of the growths. Various methods have been advised for doing this, especially the use of the cautery-loop or écraseur when the tumour is large. Even within quite recent years I have repeatedly seen a surgeon treat this complaint by amputation of the labium majus on each side with the écraseur. The disease was very completely removed in this way, but at the cost of considerable loss of healthy tissue, and consequent permanent disfigurement. Such a proceeding is clumsy and altogether unnecessary. The growth should be removed, but without injuring the parts beneath.

The patient, being anæsthetised, should be placed (and secured) in the lithotomy position, the parts being thoroughly cleansed with a 1 per cent. solution of lysol. Then the growth should be removed with scissors. In doing this, two difficulties are met with. The first difficulty (when the tumour is large) consists in finding any certain line of demarcation between the sound skin tissue underneath and the tumour sprouting above it. The best guides, if scissors or knife be used, are the sense of resistance offered by the tissue to the excising blades, and the visual remembrance or picture of the natural contour of the parts affected. The papillary outgrowths are of less consistence, less firm, and more friable than the true skin underneath, and with a pair of scissors, slightly curved on the flat, it is quite possible to start from one edge or side of the growth and slowly shave it off, leaving the true skin below altogether uninjured.

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* I have often met with warts within the vagina (especially along the sides at the lateral reflexions or angles) without any trace of vulvar outgrowths; but these are flat on the surface, never very extensive in growth, and it is questionable whether they are really of the same nature as those I am now describing.

The second difficulty is hæmorrhage. This is apt to be copious, but can *always* be controlled by pressure. When a portion of the tumour has been removed, the surgeon's hand is followed by the sponge, and pressure maintained by assistant or nurses as he proceeds—successive sponges covering the denuded parts—until the whole of the vulva has been set free. Then the sponges are removed in the order of the dissection, any spouting vessel is seized with catch forceps and ligatured, or if (as usual) there is only general oozing, the surface is lightly touched with the thermo-cautery, and the sponge is at once replaced by a pad of absorbent wool (in gauze) which has been rendered sterile by heat or squeezed out flat from a hot boracic or lysol solution. In this way the whole of the raw surface is covered by aseptic pads instead of the sponges. If not already attended to, the bladder is now emptied by a catheter, a large dry pad is placed above the immediate dressing, and the whole is fixed in position by a well-applied T bandage—that is, a broad bandage applied between the legs, and fixed (back and front) to a waist bandage or belt. In this way any superficial hæmorrhage from the vulva can be controlled as efficiently as that from the scalp, (and by similar means), although many practitioners appear to be scarcely aware of this. In six hours, or less, the immediate dressing may be changed for one of boracic acid ointment (gr. xxx. ad. ℥), dry pads being placed above this, and the T bandage re-applied. There is usually no difficulty about the healing of the parts, and the warts do not return. If there be any gonorrhœal vaginitis, this should be healed by vaginal suppositories of silver nitrate (gr. ¼) and gentle douching (by the backward current) with dilute lysol or sublimate solution, nitrate of silver being the best germicide in gonorrhœa. (Neisser.)

These remarks as to the treatment of any gonorrhœal vaginitis, which has usually spent itself before the production of extensive warty growths, apply with still greater force if any case be observed at an early stage, when only a few scattered warts or small bunches of vegetations are present. Then the thorough treatment of the gonorrhœa may be sufficient of itself to cure the whole complaint, especially if the external parts be kept free from moisture. It is wiser, however, to remove the warts at once, or to keep them dusted with compound savin powder (pulv. sabinæ, zinci oxidi āā part. æqual.), an old remedy which is efficacious in minor cases.

(*b*) "THROMBOTIC WARTS."

This rare disease, which was first described by Mr. Jonathan Hutchinson in 1891, may sometimes affect the vulva. I have met with one case which exactly answered to the description given by Mr. Hutchinson. On both labia, but especially on the left labium, I found "little elevations or thickenings of epidermis from the size of pins' heads to that of large shot, and of a deep purple tint. The purple tint was clearly due to venous blood, but it was not felt in the vessels and could not be removed by pressure."

In some places two or three "warts" appeared to have coalesced, forming an irregularly rounded little mass as large as three or four shots laid close together, and in several places two of these formed an irregular oval. The nodules were hard, hemispherical in shape, and rather purple or reddish purple in colour. On the left labium I counted as many as eighteen of these little nodules. Most of them I removed with scissors, and found them to be quite solid. A section through the base of a nodule showed a firm centre, of whitish colour; outside of this, a perfect little circle of dark red colouring matter, and outside of this the epidermis.

Where a double nodule had been cut through, one saw a double circle at the base, which looked exactly like the section of some small vascular loop with thickened walls, but the absence of any lumen, or trace of the latter, negatived the possibility of this. It appeared to me that the nodules might really be the result of minute hæmorrhages which had set up hypertrophic or warty changes in the skin. But no reason for their presence could be discovered; there were no dilated vessels anywhere in the neighbourhood of the eruption, nor had there been the slightest evidence of capillary hæmorrhages in other situations.

I have to-day (January 10th) found my original notes of the case. The patient, E. B., came to my out-patient room, at the Priory, on November 20th, 1889. She was 49 years of age, had been married twenty years, and had five children, the youngest being 7 years old. I noticed the condition at the time as something altogether new in my experience, and it was not until some eighteen months afterwards that I found in Mr. Hutchinson's paper a description, as I believe, of this affection and the name suggested of "Thrombotic Warts" which I have here adopted.

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(*b*) "THROMBOTIC WARTS."

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A METHOD OF RESTORING PERSONS APPARENTLY DEAD FROM CHLOROFORM.

BY CHARLES A. LEEDHAM-GREEN, M.D. HEIDELBERG, F.R.C.S. ENG.

In reading the reports of death from chloroform, one is struck with the number of cases in which the cardiac symptoms predominate over the respiratory, and the inefficiency of the means at present employed to avert the fatal result in this class of cases. So long as the difficulty is confined to the respiration, the means for its relief are excellent, and almost always successful. Indeed, to quote the words of Professor König at the Annual Surgical Congress in Berlin last year, "no surgeon ought to lose a patient from chloroform asphyxia." But when the mischief is cardiac—when the heart suddenly fails and finally stops—none of these remedies can be confidently relied upon. The reason for this seems to be that they affect the circulation indirectly only. While those now in use which are directed more especially to the restoration of the heart's action—such as the hypodermic injection of ether or strychnine, inhalation of nitrite of amyl, and stimulation of the skin—are valuable only when the onset is gradual. In the severer forms of heart failure the complete or almost complete cessation of the circulation and the abolition of all reflex action render their use futile. Any new treatment, therefore, which, aiming to restore the respiration, is especially directed to the recovery of the heart's action, deserves our most careful attention.

Such a method was described in the *Berliner Klinische Wochenschrift* for 1892, in an article by Dr. Maas, of Göttingen. Little notice was taken of it at the time. It was, however, again brought prominently forward by Professor König at the Surgical Congress, at Berlin, in 1893. The method advocated was a slight but important modification of the well-known one suggested by Professor König himself. As originally practised by that Professor, the operator, standing on the left side of the patient and facing him, placed the ball of the thumb of the opened right hand upon the patient's chest, between the place of the apex beat of the heart and the sternum. He then repeatedly pressed in the thoracic wall with a quick strong movement at the rate of thirty times to the minute.

Dr. Maas was led, through the following incident, to modify this procedure in one particular, and thereby greatly to enhance its value. A boy, aged 9 years, whilst under chloroform for cleft palate, suddenly ceased to breathe; the pupils dilated, and the face became cyanotic. He was at once treated by Prof. König's method; but both pulse and respiration became gradually weaker until at length they stopped altogether, and the boy was considered to be dead. Dr. Maas, who had been compressing the thorax at the usual rate, on learning that the respiration and the heart's action had entirely ceased, became excited, and commenced to compress the chest wall very quickly and strongly (at about the rate of 120 to the minute), and in a short time was agreeably surprised to observe the pupils contract, and to detect faint attempts at respiration. Although the boy's life hung in the balance for fully an hour, during which time this quick compression had to be continued, in the end he recovered.

Since that time the quick compression of the precordium has invariably been used in the Göttingen clinic and with the best results. Whilst acting there as Assistant to Prof. König I had several opportunities of testing its value and was much struck with its efficacy in case of heart failure. But the most striking instance of its efficiency that I have met with was one in which I had occasion to use it a few weeks ago. The circumstances of the case were these:—A healthy child four months old was under operation for circumcision in the out-patient room of the Queen's Hospital. The child took the chloroform at first very well; and the operation being almost concluded, the lint on which the chloroform had been given had been laid aside for a moment or two. Suddenly the child became deadly pale, the pupils dilated, and the respiration and the heart's action ceased.

The operation was instantly stopped; the head was lowered and the tongue was pulled well forward. As the child made no attempt to breathe, artificial respiration (Silvester's method) was energetically used. This proving ineffectual, the child was completely inverted for a few seconds, being held up by the heels. Silvester's method was again tried, but without producing the slightest effect either on the breathing or on the heart. At this point I happened to come into the room, just as the anæsthetist declared the child to be dead. I at once examined the child and could not find any trace of life whatever. There was no impulse of the heart to be felt, nor was there the slightest effort to breathe; the surface of the body was pale and cold; the eyes were shrunken and the pupils widely dilated; at the mouth and nostrils a collection of froth appeared together with some stomach contents which had been forced up during the artificial respiration.

Although I did not for a moment doubt that the child was dead, yet, in desperation, I at once commenced the rapid compression of the precordium as described above. For fully three minutes I worked away, apparently without result, during which time my colleague and I discussed the painful questions of informing the waiting mother and the unpleasantness of an inquest. Suddenly we were surprised and delighted to hear a faint gasp, followed in a few seconds by another. A little later I felt a weak heart throb, and in a minute or two more the child began to cry, and all danger was passed.

The points of special interest to be noted in this case are (1) the length of time (seven minutes) during which neither heart-beat nor respiratory effort could be detected; (2) the inadequacy of Silvester's method, inversion, or ether, to re-establish the circulation and respiration, none of them producing the slightest apparent effect; (3) the complete recovery of the patient under the rapid and forcible heart-compression.

There can be no doubt that the efficacy of the König-Maas method lies in its direct action on the heart, restoring not the respiration only, but the circulation also. If on a fresh cadaver the precordium be quickly and forcibly compressed, it is easy to detect a distinct pulse-wave in the carotid arteries; and the pupils will be found to contract as the blood fills the capillaries of the iris.

Although this method is naturally easier of application upon the flexible chest of a child than on the rigid thorax of an adult, yet age does not preclude its use. It need hardly be mentioned that provision must be made for the free entry and exit of the air to and from the chest.

A method so simple and rational, and withal so effective, I feel sure only requires to be better known in order to be more generally adopted.

NOTIFICATION.

BY ROGER CROSSKEY, M.D., D.P.H.
FELLOW OF THE BRITISH INSTITUTE OF PUBLIC HEALTH.

"It is good also not to try experiments in States, except the necessity be urgent, or the utility evident."—*Bacon.*

It has been suggested that all cases of phthisis should be made notifiable to the Sanitary Authorities, just as under the Notification of Infectious Diseases Act of 1889 there is legal compulsion to notify to the Sanitary Authorities who have adopted this Act, cases of typhoid, scarlet, and other infectious fevers. Such a procedure would undoubtedly be of great use if we look at the question solely from a public health point of view. At the present time we are enabled to judge of the amount of phthisis in any district from the death returns alone, and this may lead to very fallacious conclusions. For example, phthisis being often a chronic disease, patients do not necessarily die in the neighbourhood where they first acquire the disease; so that statistics founded on death returns alone may be of little value except as showing the actual number of deaths from phthisis. The death-returns from phthisis in a health resort frequented by consumptives, many of whom had become residents of the place and not merely visitors, would give us but little useful information. If, however, notification were adopted, we should be able to estimate not only the actual amount of phthisis in any district, but the number of cases *arising* in that district, and thereby should be enabled to become better acquainted with some of the many causes—social, industrial, or otherwise—which tend to bring about conditions contributing to the susceptibility of the individual and favouring the spread of the disease. Such knowledge would undoubtedly be of great use.

Moreover, on a case being notified to the Sanitary Authority, a paper could be sent to the householder explaining in simple language the nature of the disease and the precautions that ought to be adopted by the patient and those about him. One of the great advantages of notification would be its important educational influence. If such a system were adopted, people would begin to recognise the fact that phthisis is an infectious disease; and it seems very necessary that they should do so if the proper preventive measures are to be satisfactorily carried out.

Again, it would be possible to ensure the proper disinfection of houses in which deaths from phthisis have occurred, and this is of considerable importance.

But when we consider the claims of the individual, there is much to be said against any system of notification. Although the science of preventive medicine aims at the general well-being; nevertheless, since the community is made up of units, the claims of these individual units ought to be considered, more especially in the case of a disease like phthisis, which affects such a large number of people.

In some cases, notification would he an extremely harsh and almost cruel measure. For example, a large number of cases of incipient phthisis not only improve, but often, for all practical purposes, are cured; the patient living to a good old age, and eventually dying of some disease other than phthisis. But this curability of phthisis is, unfortunately, not universally recognised, hence it may often be advisable to withhold from the patient the real nature of the disease from which he is suffering.

Take the case of a young girl who has symptoms of commencing phthisis. On physical examination, expiration is found to be prolonged and an occasional crepitation heard at the left apex posteriorly; the sputum contains tubercle bacilli. Under a system of notification the case would have to be notified as one of phthisis. The patient would, consequently, soon learn that she was suffering from "consumption." Not only would her future prospects as to marriage, etc., be ruined, but mental worry and depression might impede if not altogether prevent recovery.

Then again there are difficulties in the way of successfully carrying out a system of notification:—For instance, it is often impossible to diagnose with certainty an early case of phthisis unless the sputum be constantly examined for tubercle bacilli; and this cannot always be carried out as a routine practice. Hence many early cases of the disease would not be notified at all.

Objections such as the above would not apply if *deaths* alone from phthisis were notified to the Sanitary Authorities and power given these Boards to ensure the proper disinfection of infected rooms and houses. Such a measure would readily be brought about by the addition of a few clauses to an already existing Act, and would be of great benefit as a protective measure without being in any way inquisitorial or cruel.

PRACTICAL MEANS TO PREVENT THE SPREAD OF PHTHISIS.

BY R. CROSSKEY, M.D., D.P.H.
FELLOW OF THE BRITISH INSTITUTE OF PUBLIC HEALTH.

"And where it strews the floor swept with a woman's neatness, breeding else contagion, and disseminating death."—*Cowper.*

It has been clearly proved that the *causa causans* of phthisis is the tubercle bacillus, and the contagious nature of the disease is now a well-established fact. The sputum, saliva, and discharges from the respiratory passages have been shown to constitute the chief sources of infection in phthisis, and should on no account be allowed to become dry. If tuberculous sputum be kept moist, the tubercle bacilli and spores are, as it were, imprisoned; they cannot escape from a wet surface and contaminate the air: but sputum, when dried, rapidly becomes pulverised and mixed with dust. It is thus readily carried into the air and may be inhaled into the lungs. In this way, by means of dried tuberculous sputum, the contagion of phthisis is usually conveyed. It would surely, then, be a wise plan to explain to phthisical patients in what ways they may be a source of danger to others, and to urge upon them the importance of minimising this danger by, as far as possible, adopting precautions which, although apparently trivial in detail, may nevertheless be of vital importance to the community. To put the whole matter shortly:—the expectoration of consumptives is a dangerous infective material which should be destroyed at once, or, at any rate, kept moist until rendered harmless by the use of germicides or by some other means.

For the sake of convenience, phthisical patients may be divided into two classes. On the one hand, those who manage to do their daily work and earn bread for themselves and families; and on the other hand, those who are confined to their houses or beds. The former—"perambulating" cases, if we may so call them—are very difficult to deal with, since it is obvious that only a certain number of the more educated will be inclined to adopt any precautionary measures. The phthisical labourer, for instance, is not likely to refrain from spitting on the floor of a railway carriage. It will be obvious that the preventive measures advocated as regards those confined to their houses will also apply to some extent to the first group of cases.

Perambulating phthisical patients ought on no account to spit on the floor of any room, building, railway carriage, etc. Spitting directly into the fire is an effectual method of destroying the infective material. If a handkerchief be used, it should subsequently be disinfected by being soaked for twenty-four hours in a solution of perchloride of mercury (1 in 500), then washed and dried. Or, more conveniently, paper pocket-handkerchiefs may be used, which can be burnt after use.

Dr. Heron has suggested that patients should have attached to their handkerchief pocket a movable waterproof lining, which could be disinfected from time to time or, better still, burnt

The recommendation to carry about a spittoon containing a little water into which the patient could expectorate, although by far the best plan, is an unpleasant one, and not perhaps so likely to commend itself to the patient as the method of using a pocket-handkerchief and subsequently disinfecting it. A handkerchief should be held before the mouth when coughing, otherwise particles of saliva containing tubercle bacilli may be scattered during the act of coughing.

The room or rooms occupied by phthisical patients should, *if possible*, face south or south-west, to ensure exposure to the sun, the rays of which have a powerful germicidal action on the tubercle bacillus; not only for this reason, but because sunshine and light are in themselves powerful stimulants. Means should also be taken to ensure proper ventilation. As a rule, rooms occupied by phthisical patients are not well ventilated, at any rate amongst the poorer classes.

As bearing somewhat on this, it may be noted that there is a large amount of phthisis in back-to-back houses, where through ventilation cannot be obtained and but little sun can penetrate. Speaking generally, the more ill-ventilated and confined the street, the higher the death-rate from phthisis. The following illustrative case is one of a series contributed to the Collective Investigation Committee of the British Medical Association:—

"In 1862 a servant suffering from phthisis came home to her mother, a widow with three sons and two daughters, all grown up, the father having died of epithelioma. The house, consisting of two rooms and an attic, and lying under the brow of a hill on its northern aspect, was *ill-ventilated* and *worse lighted*. At the end of 1868 the only survivor of this family, she being still alive and healthy, was a thin delicate girl who took little or no part in the nursing. They all died of phthisis, the mother dying last, between 50 and 60 years old."

Patients confined to the house ought to be supplied with a glass or glazed earthenware spittoon, containing a little water, into which they should expectorate. The spittoon should be washed out daily with boiling water. For wiping the mouth, linen rags might be used, which could be disinfected or (far better) burnt immediately after use. It should be noted that by taking such precautions, not only do patients cease to be a source of danger to others, but benefit even themselves, since the constant inhalation of tubercle germs cannot fail to infect other parts of the lungs which may be already weakened but not actually diseased.

In a large proportion of cases of phthisis the intestines also become infected with tubercle—another instance of auto-infection. The ordinary method of disinfecting the excreta by the use of carbolic acid or other germicides should in such cases be adopted. The bedroom should, as far as possible, be arranged as in other infectious diseases, and, in cleansing the room, everything that has to be cleaned should first of all be moistened; on no account should the dust be "swept up."

With regard to those nursing phthisical patients, it is extremely unwise that they should sleep in the same bed with their patient. A daughter perhaps nurses a sick mother, or a friend a dying companion; mental worry and bodily fatigue affect the general health; the lungs share in this general malnutrition, and are moreover constantly exposed to infection, with the result that the disease may be acquired. The following case, which was reported in the *Boston Medical Journal*, 1887, vol. ix., bears somewhat on this.

"A young girl, 23 years old, shared the same bed with her younger sister who was dying of consumption. She nursed her to the end, and slept with her until five weeks before her death. Four days after the death this girl showed the first symptoms of phthisis, of which she died two months later."

Lastly, on the death of a patient the room or rooms occupied by the deceased prior to his death ought to be properly disinfected.

As an illustration of the danger of sleeping in bedrooms previously occupied by phthisical patients, we may mention a case reported in the *Deutsch. Med. Zeitung* of 1882. A young healthy man went to a health resort and, whilst there, occupied a room and bed which (as was subsequently discovered) had just been vacated by a consumptive, who suffered from suppurating sores. He contracted the disease, and some weeks afterwards died of acute phthisis.

Other cases of the same kind have been reported, in which members of healthy families have lost their lives in consequence of occupying infected rooms.

With regard to the method of disinfection:—No gaseous disinfectant seems to be of much value. Chlorine, for example, apparently has no effect on tubercle bacilli. Steam and boiling water are by far the best possible germicides. The bedding should be subjected to disinfection by steam, the sheets and curtains well boiled. The carpets may be beaten in the open air and the dust caught in straw which should be immediately burnt. For scrubbing the floors, soap or lime and hot water are the best disinfectants; the walls and furniture ought also to be thoroughly cleaned.

When we consider how large a number of people in this country die annually from phthisis, it does not seem unreasonable in the face of recent research to urge the adoption of some preventive measures which would interfere very little with the liberty of the individual and cost but little in their practical application, yet might be the means of reducing the mortality from this disease. That such a result is not altogether imaginary may be seen from the effect of preventive measures adopted in Germany, notably in Baden Baden, where it is stated the number of deaths from Tuberculous Diseases has already diminished to such an extent that the same reduction in the British Isles would mean a saving of 10,000 lives per annum.

REPORTS OF CASES.

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A CASE OF POST PARTUM TUBO-OVARIAN ABSCESS IN A PECULIAR POSITION.

BY FRED EDGE, F.R.C.S., WOLVERHAMPTON.

The patient is 21 years of age, of slight but active frame, and generally sound.

Four months ago she was confined of her first-born child, and she informs me that she had a severe confinement. There was no special cause of obstruction nor hæmorrhage, neither was there laceration to any degree of the parturient canal noticed. After the birth of the child she did not gain strength and recover quickly, but had a severe illness with fever, pain in the left side of the pelvis and down the left leg, and a mass in the left side.

When admitted, there was no fever, the pulse was from 90 to 100. She complained of pain in the left side and general debility. The pain was much increased if she was up for a short time.

On examination of the abdomen, a prominence in the left iliac fossa was seen. This could be felt as a firm, rounded, crescentic mass, in which fluctuation was doubtful, and it was dull on percussion. Per vaginam, the uterus was felt to be fixed to a mass on the left side, which spread to the pelvic wall. Bimanually the uterus could be felt distinctly, and a boundary marking it from the lateral mass, but not separating it by any division, was perceived by a difference in consistence and roughness of outline. By the sound, the uterine cavity was found slightly enlarged and dilated, but not more than one would find often at the same period after labour. The mass did not push down the posterior fornix, and the posterior wall of the uterus was free.

As there were no urgent symptoms, the patient was kept at perfect rest for six weeks, her bowels were constantly emptied by saline aperients, alteratives, absorbtives, and counter-irritants, with icthyol-glycerine applications in the vagina and hot douches and enemata were all carefully tested, and their conjoint action was accompanied by a gradual lessening of the swelling, and would perhaps have attended its disappearance if the patient could have been *rested* indefinitely. At the end of six weeks she was allowed up for a couple of hours, and she next morning noticed a great increase in the size of the mass and in the pain and discomfort.

From the shape of the swelling, its position, the absence of fever, and its history, I diagnosed the condition as one of pyosalpinx with cellulitis of the broad ligament; and as I could not keep the patient on her back indefinitely and she was a labouring woman, I thought it would be good practice to explore, and if found, to remove the pyosalpinx.

On opening the abdomen, great adhesions were separated, and then for some time I could not make out the condition of the parts, nor what I had to deal with, nor what I was going to do.

The pouch of Douglas was free, which rather put me off pyosalpynx, and I was inclined to think that I had to deal with a simple plastic cellulitis of the left broad ligament. The omentum was in a column or rolled bundle and was adherent widely in the left iliac fossa, which is uncommon in simple cellulitis. I tried to separate its adhesions but failed, as the bleeding became severe. I then tied the whole omental bundle in two places, cutting between. It was evident now that the tube and ovary were implicated, and the resulting mass, which contained a fluctuating cyst of Tangerene orange size, was fixed high in the left pelvic wall and in the left iliac fossa, where the omentum had covered it and adhered to it and the parietal peritoneum. The tube and ovary and broad ligament with omentum were removed together with some parietal peritoneum which was torn off. The attachments were tied off in two pedicles, one at the horn of the uterus and the other at the pelvic wall. The separation was very difficult, and the sygmoid flexure, which was intimately adherent, was badly torn, but not sufficiently in any place, so far as was noticed, to require suturing. A Keith glass drainage tube was used after washing out with Mr. Lawson Tait's apparatus. The patient's pulse and temperature before operation were 90 and 98 respectively.

There was collapse and great pain, so that an injection of morphia was given. (In my own abdominal sections I have only given morphia twice before, and each case died, so that necessity is great before I use morphia). An enema of 1 teaspoonful of common salt, ½ oz. of brandy, 1 oz of milk, 5 oz. of water, was given three times in the night.

Evening of operation, P. 124, T. 98°. Next day, Nov. 17, P. 140, T. 98·8°. Slight distension was treated by calomel and enemata of soap, turpentine, glycerine, and castor oil. At 9 p.m. on Nov. 17, T. 99·2°, P. 152.

The bowels did not act either with flatus or fæces, and on the 19th fæcal matter exuded from the abdominal wound freely. As the enemata were irritant they were changed into free irrigation of the rectum with normal saline solution, which passing upwards helped to clear the abdominal channel.

The patient gradually improved, and although the fæces passed through the abdominal incision alone for three days she felt better. Gradually more passed per anum, and now the fistula is almost closed. She is walking about at present and gaining strength and flesh.

These fistulæ are very chronic, and no doubt the silk ligatures act as setons.

The points of interest in this case are to my mind as follows :—

1. The absence of fever when the patient was kept resting. This seems to point away from pus in any cellular tissue, and is more in accord with pus contained in a cavity lined by mucous membrane or its homologue, as an ovarian follicle.

2. The peculiar position of the mass of exudation and adhesions around the cyst containing pus.

In these cases of post partum suppuration of the appendages it must be remembered that the germs have already gained access to these parts, often at or before conception from the other side has taken place. They are generally unilateral. Hence the tube which is carried up into the level of the iliac fossa during pregnancy, if inflamed, would form adhesions at this level, and after labour the descent of the uterus would tend to drag upon the adhesion and permit leakage which would excite peritonitis and fix the omentum.

A condition similar to this, if not the same, was described by Mr. J. W. Taylor, and he pointed out in certain cases the difficulty of making out such a tube sac owing to its position.

3. The frequency of post partum suppuration in the tubes and ovaries.

When we reflect on the possibilities which the corpus luteum of the ovary—a mass of lowly organised clot,—the widely patent tube in which ciliated epithelium must be merely side fringes at these times, and the uterine and vaginal states, we cannot be surprised at this. The abscess usually distends the ovary, but the tube mouth is spread on the ovary, and if detached, the abscess ruptures, as did the abscess cyst in this case.

4. The passage of fæces and flatus through the fistula alone for three days.

This only shows the extent of the deficiency in the bowel wall, and perhaps the collapse of the distal bowel. This exercised my mind somewhat as to treatment. At first I put a glass, then a thick rubber drainage-tube into the rectum, thinking to prevent the passage through the fistula by providing a constant escape per anum; but I afterwards removed it because it occurred to me that by keeping the distal bowel always collapsed I might entirely defeat my purpose, since the laceration in the bowel would thus be brought to gape more widely, and thus offer a direct passage into the fistulous track. This is merely theory; but it may be useful to think of these minutiæ in certain cases.

It may be asked whether the operation has been of use at all, and I can answer that I believe it has, because it has removed a sac of pus from the pelvis. This sac would not have become absorbed quickly. (The lessening by treatment was of the surrounding inflammatory exudation and adhesion chiefly.) It could not without rupturing an organised cellular wall escape externally, as a cellulitic abscess does, and finally heal after a long discharge. If it had subsided for a time so far as to allow conception again to take place, there would have been trouble during pregnancy, and every possibility of rupture and fatal peritonitis at the confinement.

Should the fistula not close within six months, I shall, with the patient's consent, re-open, and remove the silk ligatures if possible. At such a depth I should not try to find the opening in the bowel and close it, unless, indeed, I am mistaken as to the remoteness of the fistula.

LYMPHANGIECTASIS OF THE EYELIDS AND CONJUNCTIVA

BY W. D'E. EMERY, B.SC., M.R.C.S., L.R.C.P.
OBSTETRIC AND OPHTHALMIC HOUSE SURGEON, QUEEN'S HOSPITAL.

THE study of the diseases of the eye is of special interest to the pathologist, from the accuracy with which morbid changes—such as neuritis, embolism, and catarrh of mucous surfaces—can be watched during life, and the effect of treatment observed. In the following case the nature of an otherwise mysterious tumour was made clear by the state of the conjunctiva.

A. P., aged 12 years, was admitted to the Queen's Hospital, under Mr. Priestley Smith, suffering from a swollen condition of the upper and lower eyelids and the skin round them, closely resembling the appearance caused by the œdema in acute Bright's disease.

His mother states that at birth his face was quite natural, and remained so till he was a year old, when one eye became swollen. A week after this the other eye was similarly affected. The onset is said to have been rather rapid, but little reliance is to be placed on the history. Since then the condition has remained substantially the same, except for slight variations such as have occurred while he has been under observation.

On admission, the upper and lower eyelids on both sides were thickened and puffy. This condition extended above the orbital margin for about half an inch, below it for about one inch, and outwards for about an inch and a half. There is no visible sharp upper margin, but the lower and outer borders are sharply defined. The edges all round can be felt plainly. The thickness of the swelling just under the lower lid is about a third of an inch. The skin appears healthy. At first there was no pitting even on prolonged pressure, but afterwards it became softer, and pitted slightly. Internally the upper half or two-thirds of the nose is affected in a precisely similar manner, the thickening being very obvious and readily perceptible on pinching up the skin over the bridge of the nose. In consequence of this increase in thickness (which is obviously in the subcutaneous tissue), the canthi are pushed apart, thus giving rise to an appearance like that of epicanthus. The distance between the internal canthi is one inch and three-quarters instead of about an inch. The condition is absolutely symmetrical.

On admission, there was some marginal blepharitis and some muco-purulent discharge from the nose. It was thought that this local irritation might have had some influence in keeping up the pathological condition of the eyelids; but this did not improve in the slightest when the inflammatory process was cured. There was no evidence of any other disease, local or general. The boy was otherwise well developed and intelligent. The urine was normal, but during his stay in the hospital occasionally contained faint traces of albumen.

Thus we have in this case an appearance much like that presented by the eyelids and loose tissue round them in acute Bright's disease, but of long duration, and unassociated with any general disease. The nature of this thickening is at once evident from the conjunctiva, which shows very beautifully the condition of lymphangiectasis. The whole ocular conjunctiva in each eye is covered by a close network of greatly dilated and very tortuous lymph vessels with transparent colourless contents. It is difficult to make sure of its existence on the palpebral conjunctiva, but its presence is indicated by a small transparent lobulated tumour close inside the upper punctum. This proved, on microscopic examination, to be formed of dilated lymph vessels similar to those seen on the ocular conjunctiva.

The solid character of the swelling, the absence of pitting, and the symmetry, suggested at first that the condition was allied to myxœdema or cretinism. The apparent width between the eyes also favoured this view of its pathology. Against it were the facts that it was so strictly localised; that the patient's intelligence and general health were good in every respect; and that the thickening in the tissues was caused by dilatation of the lymphatics, and not by growth of new myxomatous tissue. The patient was, however, treated with thyroid extract, but no improvement took place.

It was suggested that the dilatation of the lymph vessels might be caused by blocking of the deeper sinuses, lymphatic or venous, draining this area. This might afford an explanation of the symmetry, but this view is untenable on many grounds, such as the chronicity, the freeness of the anastomoses, and the diversity of destination of the vessels draining the affected area. Besides this, obliteration of a whole set of lymphatics is not, except in rare instances, as in elephantiasis, followed by lymphangiectasis; and although venous obstruction might account for such symmetrical œdema it could hardly cause its peculiar localisation, chronic course, or dilatation of the lymph vessels of the conjunctiva.

The question of a nervous origin was also raised by its bilateral character, the occurrence of œdema in affections of the fifth nerve being well known; but there was no pain or other evidence of nerve affection. In this connection it may be mentioned that the case presented some analogy to the rare disease known as Angio-neurotic œdema described by Quincke and others, and characterised by the sudden appearance of œdema caused by dilation of the vessels. The eyelids are a usual seat of the disease. The œdema is, however, generally only transient, and there is a marked history of hereditary predisposition, which was absent in this case.

All things considered, the case seems to present most analogies to a tumour, such as a nævus; it is in my opinion a cavernous lymphangioma. They are referred to by Erichsen as "excessively rare tumours composed of dilated lymphatic vessels communicating with one another like the spaces of the cavernous angioma, the cavities containing lymph instead of blood." He also refers to the fact that one variety of macroglossia has a similar structure. This is of interest in the case under discussion, as macroglossia and the allied disease, macrocheilia, are also bilateral. The above-mentioned authority seems to infer that these tumours are always congenital, but in this case the history seems to be quite clear that it came on some time after birth; in fact the whole history of growth and cessation of growth without retrogressive changes reminds one forcibly of the clinical history of nævus.

Mr. Hutchinson has described a similar disease under the name of lupus lymphaticus. In this affection the skin appears to be the seat of groups of deep-seated vesicles. It occasionally occurs on ordinary nævi, and this, together with its structure, indicates its connection with ordinary angioma. The case under discussion seems to agree with this affection, except that the dilation has not gone so far as to form cysts; but this explanation leaves the most marked feature in the case, its symmetry, totally unaccounted for.

The treatment adopted in this case was followed by but little improvement. The marginal blepharitis was cured by means of dilute alkaline lotion and zinc ointment, and the chronic rhinitis by nasal douches of normal saline solution, but as before stated these had no effect on the swelling. The thyroid treatment not having succeeded, the patient was given half a pint of hot water three times a day, with the idea of increasing the fluidity of the lymph. This appeared to cause considerable softening, but no diminution in size, of the tumour. As a *dernier ressort* a course of arsenic was given, the action of this drug in other lymphatic tumours, as in Hodgkin's disease, indicating its use: but no benefit resulted.

I am indebted to Mr. Priestley Smith for kindly allowing me to publish this case.

NOTES OF A CASE OF SCURVY RICKETS.

BY E. ST. J. WHITEHOUSE, M.R.C.S, L.R.C.P.
LATE HOUSE PHYSICIAN TO THE CHILDREN'S HOSPITAL, BIRMINGHAM.

G. D., a girl aged 1 year and 6 months, was admitted, on the 30th of November, 1894, to the Children's Hospital under the care of Dr. Drury.

Previous History.—Was said to have been wasting for eight months; had been weaned when six months old, and since that time had been fed on Ridge's Food and cow's milk. Was continually crying out as if in pain, especially when picked up or handled in any way. There was no history of syphilis.

Condition on Admission.—Child is small and very emaciated; lies in bed without any attempt at movement; the forehead is square, and the anterior fontanelle is unclosed; the gums are swollen and spongy, of a dark purplish colour, bleeding readily when touched; has four upper and two lower incisor teeth, which are all in a carious condition. The ends of all the long bones are enlarged, and the ribs show extremely well-marked beading. There is considerable swelling around both shoulder and knee joints. On grasping the head of either humerus and rotating its shaft, distinct movement, accompanied by a rather soft crepitus, can be felt. The lower epiphyses of both femora are similarly separated from their shafts. The right thigh is occupied by a deep-seated swelling running the length of the shaft of the femur; the swelling is tense, and elastic to the touch. Any movement of the limbs causes the child to cry out as if in pain.

Progress of Case.—The child was given fresh milk, and a teaspoonful of orange-juice was administered three times a day. The condition of the gums improved considerably after the second day, but the general condition showed no improvement. The bowels were opened frequently, the motions being small, loose, and light in colour. The temperature varied between 101 and 105°. The child died on the eighth day after admission.

The temperature observed was as follows:—

	a.m.	p.m.
Nov. 30.	—	102
Dec. 1.	101·4	103
„ 2.	102·6	102·8
„ 3.	100·8	104·8
Dec. 4.	103·8	104
„ 5.	102·4	103·4
„ 6.	101·2	104·8
„ 7.	102·8	103·4

Post mortem. December 9th, 1894. — *Thorax*—The lungs weighed 4½ oz. There was a considerable hæmorrhage between the visceral pleura and the lower lobe of the right lung, the lung tissue of this lobe being congested and œdematous, and but slightly crepitant. There was another small sub-pleural hæmorrhage in the upper lobe, the lung tissue appearing healthy. The lower lobe of the left lung was in a similar condition to that of the right, the upper lobe being healthy.

Heart.—Pale and small, a small *post mortem* clot in the right ventricle, the other cavities being empty; valves competent, no staining of the endocardium.

Abdomen.—*The Liver* weighed 8 oz. and was marked on its surface by the ribs, the organ was very pale and had the naked eye appearance of fatty liver.

Kidney.—Weight 1½ oz., pale and lobulated, capsule stripped easily.

The *Spleen* weighed under ½ oz., was very dark in colour.

Intestines a good deal distended, were stained with bile in places, appeared to be otherwise healthy.

Bones.—The periosteum of the right femur was separated from its shaft by a large extravasation of blood partly fluid and partly coagulated; the lower epiphysis was separated from its shaft. The knee-joint was healthy. The periosteum was also separated from the shaft of either humerus by a like effusion for about the upper half, both upper epiphyses being separated from their shafts. The beads on several of the ribs were cut into; there was no sub-periosteal effusion, the cartilage simply showing irregular ossification.

PERISCOPE.

DISEASES OF DIGESTIVE SYSTEM.

BY O. J. KAUFFMANN, M.D.

Pancreatic Concretions.—A case of illness diagnosed by the writer (Holzmann, *Münch. Med. Woch.*, Nov. 20, 1894,) to be due to pancreatic concretions is of interest. The chief points on which the writer lays stress are the following:—Severe attacks of pain of varying duration, commencing immediately beneath the costal arch on the left side in the nipple-line; copious ptyalism accompanying the pain; and later, the occasional presence of small quantities of sugar in the urine and, after the severest paroxysms, a moderate degree of fever. Regarding the excessive flow of saliva, which to all intents resembled ordinary water-brash, Holzmann recognises that it is met with in connection with diseases of the stomach. In the present case all gastric disease was excluded by the most careful clinical enquiry. The case suggests that, regarding the frequency with which water-brash is observed, clinicians might look more frequently for sugar in the urine, with a view to discover whether, in some of these numerous cases at least, there may not be reason to suspect the pancreas as being the organ primarily diseased. As for fever, it was not very high or prolonged, and did not occur until after a particularly severe attack of pain.

Regarding the sugar in the urine, it is worthy of notice that v. Ackeren has described two cases of disease of the pancreas in which the sugar had the constitution of maltose, not of grape sugar (*Berl. Klin. Woch.*, No. 14, 1889). In the present instance, however, it could not be proved to be maltose. There appeared, in the case under consideration, to be no constant relation between the painful attacks and the intermittent glycosuria. Before the patient's admission to Eichhorst's clinic (from which this report appears) pancreatic concrements were reported to have been found in the fæces. No excess of fat was found in the evacuations. The treatment is of interest, being based on pharmacological experiment and having apparently been beneficial. It consisted in subcutaneous injections of pilocarpine. (½ to 1 cb. c of a 1 per cent. solution) and was founded on the fact that this drug stimulates the flow of pancreatic juice, from which it was concluded that it might be useful by lessening the tendency to concretion and by helping to wash out any calculi already formed in the pancreatic ducts.

Disorders of Stomach.—A contribution of great practical interest regarding the treatment of stomach diseases is Rosenbach's paper "On the Use and Abuse of Bi-carbonate of Soda." (*Münch. Med. Woch.*, No. 3, 1894.) At the outset Professor Rosenbach lays stress on the fallibility of several of the most recent methods of investigation of gastric disorders. He deprecates the reliance too often placed in a single sign or symptom, as pathognomonic of a definite derangement of the stomach, and brings into special prominence the fact that there is no such thing as a generally applicable limit to the quantity of hydrochloric acid-secretion which may be regarded as normal. The quantity of this acid varies with the individual in health, and many neurotic and anæmic persons suffer great discomfort from the presence in the stomach of a quantity of acid which in others would, according to the usually accepted limits, be distinctly subnormal. It is, moreover, of the greatest importance, in investigating a case of dyspepsia, to bear in mind the effect which intestinal disturbances have in altering the action of the stomach—a point too often neglected, especially in recent times, owing to the ease with which the contents of the stomach may be examined; whereas those of the small intestine are inaccessible to the investigator. A further physiological point is this, that many individuals require, for the regular peristaltic action of this intestine, a certain quantity of gastric acid, and in such persons regular action of the bowels is induced by the administration of small doses of hydrochloric acid. The general habits of life, and working of the whole digestive apparatus, must therefore be a matter for careful inquiry by the physician before he proceeds to treat what is the most evident and often the sole complaint which the patient makes—viz., pain in the stomach.

It is undoubted that in the great majority of cases of gastric indigestion—whether an excess of hydrochloric acid can be proved to be present, or whether there be only motor and sensory disturbances of the stomach without evidence of over-acidity—bicarbonate of soda acts beneficially for a time, and relieves the most pressing discomforts of the sufferer. Consequently, this drug is exceedingly popular; and being, moreover, harmless in itself, it is largely taken either without medical advice or its use is prolonged until, as is presently to be shown, it works positive harm.

The undoubted sedative action of sodium bicarbonate is most marked in two classes of cases. The first group includes *all* instances in which the stomach contents become too strongly impregnated with acid, either owing to a true over-secretion of hydrochloric acid compared with the normal quantity for the individual in question, or in consequence of an anomalous formation of organic acids, as acetic, lactic, and the fatty acids, which results from the nature of the food ingested, and frequently co-exists with an insufficient secretion of hydrochloric acid by the peptic glands. The second great group of cases readily relieved by the administration of sodium bicarbonate comprises those cases of over-sensitiveness of the stomach which exist in spite of the secretion of strictly normal gastric juice. Sufferers of this class form the vast majority of chronic dyspeptics, and are, in Rosenbach's opinion, frequently, seriously damaged by the prolonged use of alkalies. In these groups the salt in question acts as a sedative; in the first group by neutralising the excessive acidity, in the second by neutralising an acidity which is not really excessive, but which, small though it be, produces pain in the stomach. Moreover, the instances of sudden bulimia which are apt to occur in nervous dyspeptics are probably due to a sudden flow of gastric juice, and these attacks are likewise promptly relieved by soda, for the acidity is neutralised, the sensation of hunger disappearing, and there is none of the digestive discomfort which so often attends the taking of food to relieve the bulimia.

Now the first consequence of neutralising the acid is, in healthy people, a stimulus to the secretion of further acid, and a moderate use of sodium bicarbonate thus leads to an increased secretion of stomach-acid—a fact very long recognised. The evil results of sodium bicarbonate occur as follows. In persons accustomed to take considerable quantities of the drug in frequently repeated doses, the acid-secreting glands are stimulated, by the constantly recurring neutralisation of their secretion, to renewed activity, which must soon reach the verge of exhaustion, and will in the course of time permanently injure the secreting power of the glands, and add another factor to the condition of chronic indigestion. Viewed in this light, in fact, the drug is capable of working harm in almost any form of indigestion, and is pretty certain, if employed continuously for any length of time, to render the patient's condition worse. The frequency of the abuse of soda is, as before indicated, due to the regularly produced instantaneous relief which it gives the sufferer.

Another way in which sodium bicarbonate may produce ill effects is as follows:—In cases in which the stomach contents are undergoing acid fermentation, the alkalisation of part of the fermenting mass will, by removing the accumulated acid, permit a further portion of the stomach contents to ferment, as the microbes producing the fermentation in question are relieved of the accumulation of their own life products. In this way, though the pain and heartburn will be momentarily stopped by taking a small dose of sodium treatment, the original condition of discomfort will return the more quickly for the application of the remedy.

Finally, Rosenbach is of opinion that the most general applicability of sodium bicarbonate is in acute indigestions, especially when caused by excess of alcohol and when the inducing of emesis or the removal of the stomach contents by the tube is inadvisable.

Generally in all chronic dyspeptic conditions, whether they be purely hyperæsthetic (nervous), or catarrhal, or depending upon an excessive secretion of acid, or on fermentation of the stomach-contents, the use of sodium bicarbonate should be carefully regulated by the physician and never be allowed for any continued length of time. In the majority of such cases the use of hydrochloric acid after meals is followed by better results as regards permanent improvement than is the use of carbonate of soda.

[Though these remarks apply with more force to continental practice—in which the salt is often handed to the patient in a box and prescribed to be taken by "knife-points-full,"—they nevertheless have their value for this country where the drug is given with almost equal frequency in the form of an alkaline mixture which figures in most hospital-pharmacopœias and which is largely used in almost every practice.]

The confusion which at the present time exists in the minds of many regarding the altered secretion of gastric hydrochloric acid in cases of anæmia is sufficient justification for Dr. Osswald's review of the state of our knowledge on this subject (published in *Münch. Med. Woch*, No. 27, 1894). The writer commences by citing the results of many inquiries, which may be thus grouped :—In one set of investigations the finding has been in favour of a diminished secretion of HCl; in a second, the quantity of hydrochloric acid has been found not to depart greatly from the "normal;" and lastly, in the third group the result has been that an excessive quantity of HCl has been found—a view which has enjoyed considerable popularity, as furnishing a ready distinction of this class of cases from those of cancer of the stomach.

Osswald proceeds to investigate the reasons for this divergence of findings, and, leaving out those publications in which the results were manifestly influenced by mental bias and were not strictly borne out by the experimental figures obtained, these reasons may be stated as follows:—

Firstly, whereas one set of investigators have employed Ewald and Boas' test breakfast, others have used Riegel's test meal. Now although every form of meal may be used to provoke the secretion of gastric juice, it must, for the sake of comparison, be first tried on the healthy stomach—a precaution which many have neglected. Ewald's and Riegel's test-meals deserve special confidence, because we do know, from the experiments of these two physicians, what are their effects on the normal organ. But the time at which the stomach contents must be removed—*i.e.*, the height of secreting reaction to the stimulus of the meal—is different for these two meals, and some of the contradictory results may be referred to neglect of this point. Again, the presence of large quantities of albumen in Riegel's meal as distinguished from Ewald's breakfast, leads to much of the HCl being bound in the former, whereas in the latter it remains free, so that when a quantitative estimate of the total acidity by titration is made, the analysis, as compared with the test for free HCl by Congo-red, often gives conflicting results.

Secondly, owing to this last error of experiment, different values have been accepted by different authors as the normal of hydrochloric acid secreted. In connection with this point, Osswald reminds his readers that there is no such thing as an absolute normal quantity, since the amount varies with the individual.

Thirdly, it appears that the mean normal quantity varied according to the territory in which the inquiry was conducted. Thus, in Giessen (Riegel's clinique) the amount was found to be higher than that in Berlin (Ewald's clinique).

[It appears probable that this variation is due to the different forms of diet to which the people in these districts are accustomed.]

Osswald's own researches in this direction consist of a fair number of analyses and led him to the following conclusions, viz. :—

Firstly. The quantity of hydrochloric acid in the gastric juice of anæmic patients is rarely diminished, but in most instances is increased beyond the normal.

Secondly. The dyspeptic troubles of such anæmic patients do not depend upon a lack of sufficiency of hydrochloric acid.

Thirdly. The indiscriminate therapeutic use of hydrochloric acid in such cases is not advisable.

Fourthly. All theories attributing anæmia to insufficient secretion of hydrochloric acid are untenable.

The investigations were conducted almost entirely with the gastric juice of chlorotic, but otherwise healthy young women.

[It is necessary to note that Osswald's results apply therefore to cases in which the anæmia is due to exhaustion or insufficiency of the blood-forming tissues, or, since constipation existed in every one of the patients, to a self-intoxication from the intestinal canal, and not to those cases in which excessive destruction of the blood-corpuscles is the direct cause of the anæmia. It appears, furthermore, that none of the patients examined suffered from any gastric disease beyond dyspepsia and anomaly of secretion, combined with dilation of the stomach in one case.

(To be concluded.)

REPORTS OF SOCIETIES.

British Medical Association.

Birmingham and Midland Counties Branch.

The fourth ordinary meeting of this Branch was held on Thursday, January 10th, 1895, the President, Mr. H. Langley Browne, in the chair. Present, 33 members.

Dr. Edwin Morton, of Redditch, was elected a member of the Branch.

Dr. Foxwell read a paper on "The Nature of some Forms of Dyspnœa."

Dr. T. Sydney Short read a paper entitled "Observations on the Treatment of Epilepsy."

The following case and specimens were shown.

Arthrectomy of the Ankle-joint.—Mr. Barling showed a female patient, aged 18, upon whom he had performed this operation five months previously for tubercular arthritis. The disease was of two years' duration, and ten months ago sinuses had formed on the outer side of the joint. The joint was opened by an incision commencing two inches above the ext. malleolus, running down the back of the fibula, then round the malleolus and over the front of the ankle-joint to the tendon of the extensor longus digitorum. The peroneus longus and brevis were divided, and the external and part of the anterior ligaments, but none of the other tendons nor the vessels or nerve. This gave free access to the joint cavity. The whole of the synovial membrane was removed, and a sequestrum the size of a small walnut projecting from the lower end of the tibia into the joint. The divided tendons and ligaments were sutured, and in six weeks there was sound and solid union. At the present time there is a little tendency to raising of the inner border of the foot, but the patient walks firmly and without pain, and there is free mobility of the joint.

Ovarian Dermoid Cyst.—Dr. Purslow showed a large ovarian dermoid cyst which he had removed five days previously. The cyst formed a tumour filling up the whole abdomen and reaching to the ribs, and the patient had noticed her abdomen enlarging for two years. For a fortnight she had suffered from incontinence of urine, evidently the result of overflow, for on admission, her bladder was found to be distended, and 67 ounces of fœtid ammoniacal urine was drawn off by catheter. At the operation the bladder, though empty, was found to extend up nearly to the umbilicus, and its walls were exceedingly thin. There were adhesions to the omentum. The cyst contained yellow turbid fluid, which was found, on microscopical examination, to contain flat globules and cholesterine crystals. There were several large masses of sebaceous material, a few hairs, and one tooth. The wound had healed by first intention, and the patient was making a good recovery.

Stricture of the Pylorus.—Dr. Deanesly showed a greatly dilated stomach, the result of a simple stricture of the pylorus. The calibre of the latter at its junction with the duodenum was abruptly reduced to the size of a crow-quill for a length of not more than half an inch. The strictured portion, which involved the whole circumference, was not thickened or indurated, and the peritoneal covering was quite smooth. It had not yet been microscoped. The stomach held seven pints, and its lower border reached to the left groin. Complete pylorectomy could have been easily effected during life, but operation was declined. The patient was a woman, aged 60 years, who had suffered dyspeptic trouble for twenty years. For the last twelve months she had washed out the stomach daily, with great relief.

Anencephalic Monster.—Mr. Christopher Martin showed an anencephalic monster delivered in Nottingham by Mr. Charles Martin. The mother had had several children previously, all well-formed. There was no history of deformities on either the mother's or father's side. The child seemed to have been retained in utero ten and a half months. The delivery took place 320 days after the commencement of the last menstrual period, and six months after quickening. The child was a female, and weighed 10 lbs. All its finger nails had grown considerably beyond the ends of the fingers. The face presented. The broad shoulders became impacted in the pelvis, and caused great difficulty in delivery. The child was living until shortly before its birth. The only abnormal symptoms noticed during pregnancy by the mother were the excessive and irregular fœtal movements.

REVIEWS.

THE VACCINATION QUESTION.*

THE perusal of this little book leaves us with a sense of mingled pleasure and surprise, pleasure that not a single new fact or argument has been brought forward against vaccination; surprise that arguments so little convincing should carry conviction to a writer of Mr. Hutton's ability. It is strange that Mr. Hutton has not dealt more fully with the political aspect of the question. Here, if anywhere, he would be treading on firm ground. Mr. Hutton, however, appears to have little objection to compulsion provided the protection afforded by vaccination can be shown to be a reality.

To a large extent we agree with him that vaccination is not a question to be reserved for discussion solely by medical men. To us the issues seem so definite and practical, experience so convincing, that there should be no difficulty in making them clear "to the man in the street." Mr. Hutton, however, does not object to appealing to authority when it is on his side. On page 1, we read that "the authority of great names can no longer be quoted wholly on one side," and we gather from the appendix that the "great names" which have had most to do with the conversion of the writer are those of Prof. Crookshank, Dr. Collins and Dr. Creighton.

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* The Vaccination Question. A letter addressed by permission to the Rt. Hon. H. H. Asquith, Q.C., M.P., by Arthur Wollaston Hutton, M.A., Librarian of the National Liberal Club. Pages 128. Methuen & Co. 1894.

A little further on we are warned that at the present day few medical men have any practical acquaintance with the value of vaccination, and it is only those who have had care of patients in smallpox hospitals who are really in a position to give evidence on the subject. We are not aware that any one of these gentlemen possess that (in Mr. Hutton's opinion) necessary qualification.

Following the example of these "great names" much importance is attached to the history and pathology of vaccination. This has always seemed to us to be mere learned trifling. The really important point is simply this, does or does not vaccination protect against smallpox. It is merely darkening counsel by words without knowledge to evade the main issue by making injurious attacks on Jenner's good faith, or drawing subtle distinctions between specific protection and antagonism. Much stress is laid on the alleged independence of vaccinia and variola, but even this argument falls to the ground in the light of recent work by Klein (L. G. B. report, 1893), and Copeman (J. of Pathology, 1894), which conclusively prove that vaccinia is variola passed through the cow.

Apart from this demonstration of the pathology of vaccinia, it is as ridiculous as it is untrue to assert that " the syphilitic nature of cowpox is the theory which now holds the field, and it is hardly questioned by the advocates of vaccination." We know of no one who has the least claim to special knowledge of either syphilis or smallpox, who holds that they have any relation with one another.

The rest of the book is taken up with the old familiar statements, one cannot call them arguments against vaccination. Hospital statistics are dismissed as unreliable because they give so little support to anti-vaccinators. Then we are treated to that ancient superstition that fatal confluent cases are always returned as unvaccinated because the rash conceals the scars, though everybody that has any experience of smallpox knows that the insertion of the deltoid is a very unlikely spot to find the rash confluent, and that it is not customary to register a case as unvaccinated unless this is borne out by the statement of the patient as well as by the absence of scars.

Equally reprehensible is the attempt to discredit Dr. Gornall's excellent report on the Warrington epidemic because he states that certain of his fatal cases are included in the unvaccinated because they were vaccinated too late, *i.e.*, after infection with smallpox. "If they had recovered," says Mr. Hutton, "the recovery would have been credited to vaccination," and this in spite of the fact that Dr. Gornall credits the unvaccinated class with the recoveries that actually took place among those vaccinated too late (see pages 40, 41 of Dr. Gornall's report.)

Mr. Hutton gets over the immunity enjoyed by smallpox nurses by some loose talk about "constitutional immunity" and "seasoning," and appears to think the protection is no more surprising than that found among the attendants on phthisical patients! After this we cannot but agree with Mr. Hutton (p. 114) that it is in fiction that anti-vaccinators must put their trust, but we would suggest that it should be of a superior quality to that which he has inflicted on Mr. Asquith.

THE DISORDERS OF SPEECH.*

ONE of the most important contributions to medical literature that has recently appeared, is Dr. Wyllie's book on "The Disorders of Speech." Part of this work has already come out in the *Edinburgh Medical Journal*, and we can now congratulate ourselves on having the whole in one volume. Of the three parts into which the book is divided, the first treats of the functional disorders of speech (Stammering, Hysterical Aphonia, and Mutism, the Affections of "Professional Voice Users," etc.).

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* The Disorders of Speech. By John Wyllie, M.D., F.R.C.P. Ed. Edinburgh: Oliver and Boyd.

The second refers to Developmental Derangements; the third to Speech in its relations to Diseases of the Nervous System.

The author says that for the production of speech two mechanisms are necessary, that of the larynx, and the oral mechanism. The former –the voice producer—he compares to the bow-hand of the violinist, the latter to some extent to the string-hand, for by it the sounds of the larynx can be modified in tone or timbre, though not in pitch, as they pass through the oral cavity. By it also, new sounds produced in the mouth can be added to the vocal tones of the larynx. These two mechanisms must be perfectly co-ordinated or there will be defective speech. Delayed action of the laryngeal mechanism appears to be the cause of the common varieties of stammering, Consequently, when a stammerer finds that *the* voice element is not properly co-ordinated, not up to time as it were, he is extremely liable to throw more energy into the *other* and wrong direction, namely, the oral mechanism. This may cause great difficulty with voiceless explosives (t, p, k) for then the defective co-ordination of the succeeding voice element produces either a silent sticking or a stuttering voiceless repetition of the explosive effect. Moreover, there may be an overflow of energy under these circumstances, producing various facial spasms. Of these the author gives some curious examples.

The difficulty is less when singing, for then the extra attention paid to the laryngeal mechanism would appear to help in its regulation. On this fact is based the treatment of stammering. The well-known instance of Charles Kingsley *is* mentioned, as showing how a stammerer may overcome the difficulty by intoning.

The author thinks that cases of stammering are sometimes due to imitation; others seem to be the expression of a neuropathic diathesis. Of the greater frequency of stammering among males, he says it is not possible to give an explanation; but he draws attention to the fact that they are longer in learning to speak than females.

There is an extremely interesting chapter on Laryngeal

Troubles of Professional Voice Users. Here the similarity between fatigue neuroses of the larynx and writers' cramp is pointed out. The three varieties of this affection—the spasmodic, the paralytic, and the tremulous—have corresponding laryngeal forms. The treatment and suggestions for management of all these cases are given fully, and are most valuable.

As an introduction to the study of developmental defects of speech, there is a chapter on the development of language in the normal child; and the fact is pointed out that, notwithstanding the number of children in the world, very few people seem to have watched the growth of a child's language.

The speech of idiots and imbeciles is described in a very interesting manner, as is also deaf mutism. The defects in speech of persons who lisp, etc., are also carefully studied, and much information is given as to the present systems of instruction in all such cases.

The portion devoted to the purely neurological defects of speech is very full. It begins with speech in relation to insanity. Here is shown the manner in which the mind disorder is mirrored in the speech of the patient; their "speech hallucinations" are shown to be connected with disturbances of the cortical speech centres. Lastly, the affections of speech in dementia are given, as they appear to be of a different type.

The description of aphasia begins with a physiological preface, and then all the varieties of derangement in the speech mechanism are described.

There are various diagrams and plates illustrative of the subject, and copious references to literature are given.

The whole subject of speech disorders is treated in a masterly manner in this work, and the book is invaluable, not only to the neurologist, but also to the psychologist, the student of language, and to those who have to train or teach patients having developmental defects of speech.

DOUGLAS STANLEY.

MANUAL OF DISEASES AND DEFORMITIES OF THE SPINE.*

We have read Dr. Swan's little volume with pleasure, and can recommend it to those of our readers who have already some practical knowledge and experience of the commoner forms of spinal disorder.

The sections devoted to Potts' disease and its resulting abscesses are especially good, but would be of greater value still were they more systematically arranged. The determination of early symptoms by the position of the primary disorder, the references to the possibility of caries and suppuration occurring without deformity, to the frequent implication of the costo-vertebral articulations, to the causation of secondary curves, and to the rigidity due to chronic rheumatoid disease are of much practical interest. The author's experience of the plaster of Paris jacket is favourable, and we are glad to see him advocate its application in the horizontal position by the "hammock" method originated by Davy, to whom the credit might have been given. The simple pneumatic rest, devised by the author for relieving the cervical vertebræ of the weight of the overlying head, is a welcome addition to our present unsatisfactory means of accomplishing this object.

Dr. Swan's conclusions on the treatment of spinal abscess are conservative and eminently practical, and in the main we agree with them; but we think his attitude with regard to the operation of "Laminectomy" would be somewhat modified if he gave this procedure a fuller trial than he appears yet to have done.

The section on Lateral Curvature contains much that is valuable, and expresses our own views on this deformity. Chapters are introduced on Coccygodynia, Railway Spine, Torticollis, Congenital and Noncongenital Tumours, Embryonic Rudiments in the Sacral and Coccygeal Regions, Osseous

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* Manual of Diseases and Deformities of the Spine. By R. S. Swan, Fellow and Member of Council, and for many years Examiner in Anatomy and Surgery and Operative Surgery, Royal College of Surgeons, Ireland, etc. Illustrated. Dublin: Fannin and Co. 1894.

Growths in the Vertebral Region, etc., some of which might with advantage have been omitted from a "Manual" of this kind.

The book is freely illustrated, but from an artistic standpoint many of the plates are exceedingly poor; whilst not a few are really amusing. For example, that facing page 170, in which the figure of the Amazonian nurse is evidently taken from a modern fashion plate, whilst that of the Liliputian baby is after the style of a Tintoretto cherub.

The absence of a definite plan throughout the work, and the want of side-headings to leading paragraphs, make the book almost useless to the busy practitioner; and it would puzzle a senior student of more than average intelligence to grasp the fundamental facts of caries, scoliosis, and many other spinal diseases and disorders even after a most careful study of the volume,

MEDICAL HISTORY FROM THE EARLIEST TIMES.*

THIS very interesting work on medical history begins by reviewing generally the medicine and surgery of pre-historic times, and gives an account of medicine in ancient Egypt, as represented by Sekhet'enanch, chief physician to the Pharaoh Sahura, of the Fifth Dynasty (B.C. 3533 ?).

As may be expected, however, the real interest of the book begins with the account of medicine in Greece, especially with Hippocrates. The writer shows that the weak point of Greek medicine was a too marked tendency to speculate uselessly rather than to investigate scientifically. A chapter is devoted to comparing Hippocrates and Galen; and the author points out that the eminently practical observations of the former entitled him to a much higher place as a physician than the more theoretical Galen, who rather looked upon medicine as a philosophical system.

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* Medical History from the Earliest Times. By Ed. Theodore Withington, M.B. Oxon. Scientific Press Lim.

As to-day, so in Rome the struggle for existence seems to have been keen and competition high, for we read of several physicians who were compelled to take to less honourable but more lucrative callings to escape starvation. One of these, by the irony of fate, becomes an undertaker's assistant. It is interesting to find that there was apparently some system of registration for midwives in Rome.

Passing on to the sixteenth century, there is a long account of Paracelsus, and the judgment is decidedly unfavourable, showing how little worthy he was of being placed above Harvey, Vesalius, and others, as some mystically inclined persons tried to do. All through, the work carries with it a well-sustained interest, and deserves reading with care.

MYXŒDEMA, CRETINISM, AND THE GOITRES.*

THE title of this work raised expectations which we regret to say are disappointed. The author devotes a chapter to Myxœdema, Cretinism, and Exophthalmic Goitre respectively, and a final one to treatment. His contention is that "Graves' Disease" in woman is an autotoxis, most frequently caused by the absorption of purulent products. In man, however, the result is rheumatism, through their action on the medulla oblongata. "If these products," the writer goes on to say, "invade the cerebral cortex in large quantity and abruptly, we get a psychosis, as for instance, mania, or some neurosis such as epilepsy. But if the invasion be more gradual and the poisons be more diluted, we get chorea." We must confess we are unable to follow the author in this hypothetical pathology. In favour of Graves' Disease being due to autotoxis there is certainly much evidence, but it has yet to be proved, and we are certainly not prepared to believe that the absorption of purulent products of pelvic disease is the chief cause. We are firm

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[*] Myxœdema, Cretinism, and the Goitres. By Ed. E. Blake, M.D. Bristol : John Wright and Co.

believers in autotoxis as the cause of many diseases, but that the same products will cause totally different effects according as a male or female is the subject, is going too far. Moreover, when the author goes on to say (p. 57), in speaking of a case, that "autotoxis of the uterine centre, which is probably situated near the vagal nucleus, took place, and she miscarried after the sixth month," we feel it is time to draw the line. The clinical matter is not well arranged, and there is a marked tendency to introduce extraneous subjects.

LUNACY LAW FOR MEDICAL MEN.*

THIS small book is intended as a guide for medical practitioners in their relations with insane patients. It gives an extremely clear account of the present lunacy law, avoiding all legal technicalities which might, to a certain extent, be confusing.

Part 1 deals with idiots, and gives the various forms for placing them in any institution.

Part 2 begins with an account of the procedure for placing under control an insane person who is not a pauper. There is an extremely clear and complete chapter on the medical certificates, and which, if carefully studied, would save much trouble in certifying a patient. There is also a succinct account of the differences between private and pauper patients. These are given in tabular form on page 57. Throughout, information is given on almost any possible contingency that may arise, not only in the certifying of patients by a medical practitioner, but also in their management by those to whose care they are committed.

Part 3 relates to Testamentary and Contracting Capacity and Criminal Responsibility.

This book is one which no medical practitioner should be without.

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* Lunacy Law for Medical Men. By Charles Mercier, M.B. J. and A. Churchill.

NIGHT-LIGHTS (SHADOWS FROM A DOCTOR'S READING LAMP.)*

THOSE of our readers who have already made acquaintance with these clever sketches of medical life during their appearance in the *Birmingham Weekly Mercury* will be glad to have an opportunity of obtaining them in book-form, while to those who do not know them we can recommend nothing better calculated to give them a delightful couple of hours. The author is above all a humourist, and his comedy is often of the best kind. We feel as if he had only given us a taste of what he can do, and that in Dr. Kennedy, my Uncle Titmarsh, Dr. Christopher, and Mr. Bottles, we have been introduced to a little group of characters of whom we would willingly know more.

The pictures of Black Country practice and of the hospital surgery and out-patient room are very funny, but are also far from being caricatures. The phases of medical student life are also very lively and interesting, though to our more sober experience they seem to exaggerate the "beer and skittles" side of things. Where there are so many good stories, one hardly likes to choose; but for comedy, "Locum tenens," and for pathos, "Mr. Bottles' Romance," strike us as about the best.

It is pleasant to think of a professional brother able to brush aside for a time the serious cares of practice, and while away his spare moments by conjuring up these quaint fancies for our amusement. Dr. Frost has made a good beginning, and may be expected to go on and do much more in the same line.

URINARY SURGERY.†

THIS volume of two hundred and twenty pages is "an epitome of the literature of Modern Urinary Surgery," and is written for the use of students and practitioners. We have read it with much interest and can congratulate its author on the completeness of his résumé, on the accuracy of his compilation, and on the clearness of his language.

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* Night-lights (Shadows from a Doctor's Reading Lamp). By Arthur Broadfield Frost. Licentiate of the Royal Colleges of Physicians and Surgeons of Edinburgh. The Midland Educational Company.

† Urinary Surgery. By E. Hurry Fenwick, F.R.C.S. Eng., Surgeon to the London Hospital; Surgeon and Pathologist to St. Peter's Hospital for Stone and other Urinary Diseases. Illustrated. Bristol: John Wright and Co. 1894.

The contents of the volume are classified into the following sections:—1. The Surgery of (*a*) the Kidney, (*b*) the Ureters, and (*c*) the Bladder. 2. The Diseases of (*a*) the Prostate, (*b*) the Seminal Vesicles, and (*c*) the Urethra. 3. A special chapter on "Electric Cystoscopy," upon which Mr. Fenwick is able to speak with much authority. And 4. A voluminous Bibliography and a well-arranged Index, which add greatly to the usefulness of the book. Although a wide range of subjects is dealt with the condensation is so judiciously done as to be of real practical value.

The volume is well got up, and does credit to the well-known firm of Bristol publishers.

ASTHMA AND CHRONIC BRONCHITIS.*

DR. THOROWGOOD has incorporated with the new edition of his Notes on Asthma the substance of the Lettsomian Lectures on "Bronchial Asthma" written in 1879. The result is this readable and compact account of asthma and chronic bronchitis.

The author does not agree with the theory of asthma as put forward by Dr. Blackley that congestion of the bronchial mucous membrane is the sole factor in its causation; and, although admitting that congestion causes dyspnœa, he considers that muscular spasm must be present in addition. This was the view that was held by Dr. Hyde Salter, and we believe it is now universally accepted.

There is evidence all through the book of the experience and actual observation of the author; and his chapters on bronchitic asthma, as differentiated from pure spasmodic asthma, contain a good deal of information, and are marked by much common sense reasoning. It is, however, the section on treatment that will prove most interesting to the average medical reader, not only on account of the large number of drugs and remedies passed in review, but also by reason of the definite opinion stated by the author with regard to their actual value.

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* Asthma and Chronic Bronchitis. By John C. Thorowgood, M.D., F.R.C.P. London: Baillière, Tyndall, and Cox. 1894.

A MONOGRAPH ON DISEASES OF THE BREAST.*

This work is by a writer who has devoted much time to the study of tumour formation. The result is an extremely interesting book on Diseases of the Breast.

The first four chapters give an account of the development of the mamma and its anomalies; while in Chap. VII. are several tables of the usual kind, as to varieties of tumours, organs affected, etc. These the author has compiled from 13,824 primary neoplasms of all parts, in patients under treatment at the Middlesex, University College, St. Thomas', and St. Bartholomew's Hospitals. We cannot here analyse the figures given, but from them much support can be obtained in favour of the view that "neoplasms are most prone to arise in the sites of greatest post-embryonic developmental activity." As to the genesis of neoplasms, the writer is of opinion that they are the outcome of modified formative processes rather than the result of *ab extra* infection.

At the same time, we think the chapter (VIII.) which deals with "The Present Controversy" as to the causation of cancer might be somewhat fuller, and the case for the opposite side stated more impartially. Again, in the section on "Recurrence," a short table is given embracing 599 cases. It would have been possible to collect a larger number. There is a clear account of "Villous Papilloma," illustrated by several cases; while the difference between such tumours and "duct cancers" proper is clearly given.

Throughout the book copious references are given, and there are several illustrations. We strongly recommend the book as one which contains much useful and interesting information.

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* A Monograph on Diseases of the Breast. By W. Roger Williams, F.R.C S. John Bale and Sons.

PRACTICAL MANUAL OF MENTAL MEDICINE.*

THIS is a very handy work on Mental Diseases, and is, on the whole, well arranged. The subject is one in which French writers excel, and Dr. Regis is no exception to the rule. The clinical descriptions are graphic in many instances, but in some cases are rather "scamped." There is little or nothing on Myxœdema, and the subject of Morbid Anatomy is not up to date. The part devoted to the Medico-legal aspects of Insanity will not, of course, do for English students, but many useful hints are given concerning the management of mental cases.

The work will prove useful as a clinical manual to medical students.

ALPINE CLIMATE FOR CONSUMPTION.†

THE little brochure bearing this title consists of a revised amplification of an article published by the author in the *Lancet.* Sparing the readers many pages of descriptive writing, it deals principally with Davos, Arosa, St. Moritz and Les Avants, as centres, and touches briefly any neighbouring villages which may happen to rank as health resorts. The life at these various places is tersely and accurately described with an admirable restraint and freedom from over colouring. There is a fair amount of information in this book considering its small size and it is just the thing for the busy practitioner who has not time to read the larger treatises on the same subject.

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* Practical Manual of Mental Medicine. By Dr. E. Regis. Authorised Translation by H. M. Bannister, A.M.. M.D.

† Alpine Climate for Consumption. By H. J. Hardwicke, M.D. London: J. and A. Churchill. 1894.

PHYSIOLOGY FOR BEGINNERS.*

An admirable little text-book for beginners has been written by Dr. Shore and supervised by Prof. Foster. It it exactly the kind of book for a medical student commencing his studies; being well written, clear, and abounding in useful diagrams. A capital feature of the book is the introduction here and there of instructions for dissections and experiments which can be done by the student without much cost or inconvenience. We think that this will become a popular text-book with students commencing the study of physiology.

COFFEE.†

This small pamphlet is interesting and practical, and might with advantage be read by the majority of housewives. Good coffee is a luxury; but the nauseous decoction which does duty for it in most households is perhaps the nastiest of all modern beverages!

The writer of the pamphlet tells us, amongst other things, how good coffee can be obtained. In the first place, it cannot be purchased for less than 1s. 8d. per pound; and secondly, it must be properly made. For the benefit of our readers we quote the method of "Preparing for Table." "Take an ordinary jug, make it hot, use the coffee liberally (not less than one ounce to the pint), place it in the hot jug, pour on *boiling* water, stir round, and let it stand in a warm place for six or seven minutes, having a covering on the jug; and then pour it off from the grounds into a hot coffeepot, and it is ready for the table."

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* Physiology for Beginners. By M. Foster, M.A., M.D., F.R.S., and Lewis E. Shore, M.A., M.D. London: Macmillan and Co. 1894.

† Coffee. By James Lee Lodge. Birmingham, Leicester, and Leamington: The Midland Educational Company Limited 1894.

PUBLISHERS' DEPARTMENT.

New Inventions, Drugs, etc.

MARROL.—We have received from the Liquor Carnis Company a specimen of "*Marrol*," consisting of "ox-bone marrow and hopped malt-extract, plus calcic phosphates and other salts," a preparation to be used as a food, and which consists of an emulsion of bone marrow (yellow and red, it would appear), and which therefore is composed essentially of fat.

Correction.

WE regret that, owing to an oversight, the page-heading over Mr. Taylor's contribution in our last number was incorrectly given as "Cancer of the Vulva." It should have been "Stercoro-vulvaires."

New Books, etc., Received.

An Address on Appendicitis. delivered before the Surgical Section of the College of Physicians of Philadelphia, by J. WILLIAM WHITE, Professor of Clinical Surgery, University of Pennsylvania. Detroit: George S. Davis. 1894.

The Droitwich Brine Baths as Therapeutic Agents in Various Diseases. By W. H. TOMLINS, L.R.C.P. Lond., M.R.C.S. Eng. London: H. K. Lewis. 1895.

Spinal Curvature and Awkward Deportment: their Causes and Prevention in Children. By Dr. GEORGE MUELLER, Professor of Medicine and Orthopædics, Berlin. English edition edited and adapted by Richard Greene, F.R.C.P. Edin. Illustrated. London: The Scientific Press Lim. 1894.

Infant Feeding by Artificial Means: a Scientific and Practical Treatise on the Dietetics of Infancy. By S. H. SADLER. Illustrated. London: The Scientific Press Lim. 1895.

Methods of Operating for Cataract. By Surgeon-Captain G. H. FINK, H.M. Ind. Med. Service. Illustrated. London: J. and A. Churchill. 1894.

The Medical Profession and Freemasonry. Bro. R. F. GOULD, P.G.D. Margate: Keeble's Gazette Office. 1894.

A Hand-book of the Diseases of the Eye and their Treatment. By HENRY R. SWANZY, A.M., M.B., F.R.C.S.I., Surgeon to the National Eye and Ear Infirmary, and Ophthalmic Surgeon to the Adelaide Hospital, Dublin. Illustrated. Edited, under supervision of the author, by Louis Werner, M.B., B.Ch., Assistant-Surgeon to the National Eye and Ear Infirmary, etc. London: H. K. Lewis. 1895.

Notes on Medical Nursing: from the Lectures given to the Probationers at the London Hospital by the late JAMES ANDERSON, M.D., F.R.C.P., Assistant Physician to the London Hospital, etc. Edited by Ethel F. Lamport. Associate of the Sanitary Institute and of the British Inst. of Public Health. With an introductory biographical article by Sir Andrew Clark, Bart. Second edition. London: H. K. Lewis. 1895.

Notes on the Newer Remedies: their Therapeutic Applications and Modes of Administration. By DAVID CERNA, M.D., Ph.D., Demonstrator of Physiology and Lecturer on the History of Medicine in the Medical Department of the University of Texas, etc. Second edition, enlarged and revised. Philadelphia: W. B. Saunders. 1895,

Syllabus of Gynæcology, based on the American Text-book of Gynæcology. By J. W. LONG, M.D., Professor of Gynæcology and Pædiatrics in the Medical College of Virginia, etc. Philadelphia: W. B. Saunders. 1895.

Laboratory Guide for the Bacteriologist. By LANGDON ROTHINGHAM. M.D. V., Assistant in Bacteriology and Veterinary Science, Sheffield Scientific School, Yale University. Illustrated. Philadelphia: W. B. Saunders. 1895.

On the Influence of Clays and Limestones on Medical Geography: Illustrated by the Geographical Distribution of Cancer among Females in England and Wales. By ALFRED HAVILAND.

A Chart for Recording Cases of Diphtheria subjected to the Antitoxin Treatment. By W. JOBSON HORNE, late House Physician to St. Bartholomew's Hospital. London: Adlard and Son. 1895.

Public Control of Hospitals. By HARRY ROBERTS. The Humanitarian League's Publications, No. 16. London: William Reeves. 1895.

⁂ Authors can have reprints of articles at the following rates:—

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THE
BIRMINGHAM MEDICAL REVIEW.
MARCH, 1895.

ORIGINAL COMMUNICATIONS.

ABSTRACT OF A CLINICAL LECTURE ON PSOAS ABSCESS,

DELIVERED AT THE GENERAL HOSPITAL ON JANUARY 24, 1895,

BY WILLIAM F. HASLAM, F.R.C.S.,
SURGEON TO THE HOSPITAL.

GENTLEMEN,—

I WANT to draw your attention to-day to some cases of abscess involving the psoas muscle that have been under my care during the last eighteen months, as they illustrate some points in the history, symptoms, and treatment of this particular affection. You must of course remember that psoas abscess is not a disease by itself which can be treated without reference to any other part. On the contrary, it is almost invariably due to disease elsewhere, and the muscle merely acts as a convenient channel along which pus, having once gained its interior, may travel; still the signs and symptoms of abscess within the psoas are often so marked, and its treatment is a matter of such importance, that, as a clinical fact, it may be more striking than the actual disease which has caused it. While this is so, however, we must remember that its rational treatment involves a clear knowledge of its cause.

There are many points about the anatomy of the psoas—or rather the ilio-psoas, for the iliacus is essentially part of it—that have to be considered. The psoas at its origin is intimately associated with the bodies of the lumbar vertebræ, as it arises from the sides of the inter-vertebral cartilages and adjacent surfaces of the vertebræ from the twelfth dorsal to the fifth lumbar; between these attachments it arises from tendinous arches which bridge over the sides of these vertebræ, and it has also an attachment to the lower border and front of the transverse processes of the lumbar vertebræ From this origin the muscle passes down above the brim of the pelvis and under Poupart's ligament to its insertion into the lesser trochanter of the femur, its tendon receiving part of the fibres of the iliacus on its outer side, the remaining fibres of which muscle pass into a line leading from the lesser trochanter.

From a surgical point of view the origin of the psoas is of more interest than that of the iliacus, as when the ilio psoas is invaded by pus it usually gains access by means of the psoas and not by the iliacus. The interior of the psoas contains the cords of the lumbar plexus, the branches of which leave the muscle in various directions; of these the anterior crural is not only the largest, but that along which pus can most readily make its escape into the thigh. The surface of the muscle is covered by a fascia which is attached externally to the inner border of the crest of the ilium, and internally to the brim of the pelvis. This spreads upwards over the psoas and is attached towards the middle line to the bodies of the lumbar vertebræ and on the outer side to the transverse processes. The upper limit of this fascia as it bridges over the muscle being thickened and known as the ligamentum arcuatum internum.

Before speaking in detail of the cause of psoas abscess, we must bear in mind some few facts that are well illustrated in this condition.

1. That masses of cancellous bone—as, for instance, the bodies of the vertebræ—are liable to be the seat of inflammation, especially of a tubercular nature.

2. That the destruction of bone resulting from this is frequently slow, and though pus is not always formed, it is so in a large proportion of cases,

3. That while on the one hand, under suitable treatment, recovery may take place, on the other hand the inflammatory process may be severe enough to cause the isolation of considerable masses of cancellous bone, and to produce a condition of affairs that amounts to a caries necrotica rather than a true caries, the distinction being, however, one of degree rather than of kind.

4. That where pus is formed as the result of such a condition, its formation is often slow, and is not, as a rule, associated with those constitutional disturbances met with as the result of an acute inflammation. The abscess, therefore, is frequently spoken of as a "cold" abscess.

5. As pus forms, it must escape in some direction, and it naturally does so along the planes of least resistance. Thus it may travel beneath a fascia, or may associate itself with a vessel or nerve, and so make its appearance at a long distance from its seat of origin; or it may find its way into a muscle, and convert its substance into an abscess cavity, as in the case of the psoas.

6. That the abscess, as a rule, tends to increase in size, and will finally burst if left alone.

7. After it has burst or been opened, its cavity may become infected by septic material, and, as a result of this, considerable constitutional disturbance may be set up, producing a condition known as hectic.

The usual cause of pus within the psoas is some disease of the vertebræ. This may be situated in the bodies of the lumbar vertebræ, from the side of which the muscle is actually rising, or pus may travel down from a carious patch in the dorsal region, and enter the psoas by passing underneath the ligamentum arcuatum internum. When once it has entered the muscle, it is merely a matter of time for this to be converted into an abscess cavity.

It is well to bear in mind that the symptoms of spinal caries vary much in their intensity, this variation being due to the exact seat of the lesion. If it be so placed as to be subjected to pressure in the ordinary movements of the body, then pain will be an early symptom. If in its progress it involves the trunks of the nerves issuing from the spinal column, then, again, pain will be present, and is often of considerable intensity. Angular curvature will be in evidence if the disease is so placed and of such extent as to allow the bodies of the vertebræ to fall together; but obviously there may be ample caries to cause an abscess without there being much pain or any curvature. Of such a condition Case 1 is a good example.

As pus invades the substance of the muscle, it causes a complete destruction of the muscular fibre, so that in time only the thickened sheath is left. The nerves forming the lumbar plexus pass across the cavity and are completely isolated. As the abscess increases in size, it will spread into the iliacus, converting the muscle into an abscess directly continuous with that in the psoas. Owing, however, to the attachment of the fascia over the psoas to the brim of the pelvis, pus will not gravitate into this cavity, so that if further increase takes place, it will pass under Poupart's ligament either along the course of the muscle itself or along the anterior crural nerve. Once in the thigh, its further course is determined by what vessels it associates itself with; whether it will pass underneath the main vessels and present on the inner side of the thigh, or whether it will run down with branches of the external circumflex to the front and outer side of the thigh. At any rate, in such an abscess there will be several definite parts—the long sausage-shaped cavity in the psoas, its lateral diverticulum in the iliacus, the narrow opening under Poupart's ligament, and the portion in the thigh, which at times may be of large size.

The symptoms of the abscess, apart from those actually due to the bone lesion, will be some pain on fully extending the thigh, often, however, of a very trifling nature. If there be an inability to complete this movement, there will be, as a natural consequence, some lordosis. When the abscess has reached an appreciable size, there will be a sense of resistance over the psoas on palpation, with deep fluctuation more or less marked.

Later on, fluctuation may be detected in the iliac fossa or deeply in the lumbar region between the last rib and the iliac crest. Finally, if the thigh be invaded, fluctuation may be obtained between this and the abdominal swelling, and a distinct impulse on coughing will be present which, if the swelling be small and near the femoral canal, may cause it to be mistaken for a hernia.

The treatment of these abscesses has undergone a considerable change since the introduction of the antiseptic treatment of wounds by Sir Joseph Lister. Before then, it was found that when they were opened, the results were most unsatisfactory, for a profuse and chronic suppuration resulted which, in time, wore out the patient's strength. Consequently, the treatment by prolonged rest was much in vogue, and though this method is of little avail in many cases, it must be remembered that there is ample proof that very occasionally these abscesses have disappeared under its influence, for their remains have been found years afterwards in the *post mortem* room.

Withdrawing the contents by means of an aspirator was another way of treatment. Here, again, in a very limited number of cases, success was obtained; but bearing in mind the curdy contents of these abscesses, we see how difficult it must be to empty them by this means.

The most satisfactory method of dealing with these abscesses is to open them in such a way that their cavities may be thoroughly cleaned and the seat of the disease explored, if this be anywhere where access can be obtained to it. If the bone lesion can be reached, it may be possible to remove a sequestrum, or to scrape a carious surface, just as would be done, for instance, if the disease were situated in the os calcis. Mr. Treves advises exploration by a vertical incision between the last rib and the crest of the ilium; then dissecting through the outer edge of the sheath of the erector spinæ, drawing the muscle towards the middle line, cutting through the posterior layer of the sheath and the quadratus lumborum, and so reaching the psoas. In this way the abscess may be opened posteriorly, and the finger can explore the bodies of some of the lumbar vertebræ, and possibly find the seat of disease. In the two cases where I made an opening in this situation, I did so after having opened the abscess anteriorly; but in neither case could I detect any bare bone. Where the abscess is large, this double opening certainly allows one to clean its interior more effectually than when only a single opening is made. In order to thoroughly clean a large psoas abscess, one must be prepared to spend a good deal of time and to exercise some amount of patience. As soon as the pus has escaped, you alternately irrigate with some hot water and mop out with suitable mops. This process is repeated again and again until you are satisfied that no *débris* is left and that the cavity is dry. I am in the habit of putting a drainage-tube into the cavity through each incision, then passing all the sutures, but not tying them until any exudation that may have occurred is squeezed out through the tubes, which are then removed.

Case 1. R. S., aged 38, a blacksmith, admitted to the General Hospital, January 12th, 1894. He stated that for the last eighteen months he has had pains about the lower part of his back, what he called "rheumatic lumbago," but that he had continued his work as a blacksmith without any great inconvenience. Five weeks ago, whilst shoeing a horse, the animal suddenly pulled up its leg and struck him on his right groin, causing him to fall over. For three weeks after this he had some pain over the seat of injury, but did not notice any swelling; at the end of this time, however, he found there was some swelling in the upper part of the thigh, and he then gave up work and rested at home until his admission into the Hospital.

On admission there was a fluctuating swelling on the front of the right thigh external to the vessels and below the outer half of Poupart's ligament; there was a most marked expansile impulse in this when he coughed. The fulness could be traced under Poupart's ligament and up along the situation of the psoas and for some distance into the iliac fossa. Fluctuation could be easily elicited between the upper part of the swelling and the part in the thigh. There was but little pain on deep pressure. The movements of the hip were but little interfered with, and there was no marked lordosis. Percussion over the spine did not cause pain, and there was no prominence at any point.

The diagnosis made was that of an abscess within the psoas that had been very slowly forming, probably for many months; that this had made its way into the upper part of the thigh, but was not of sufficient size to be noticed until the kick from the horse caused it to increase. The cause of this was thought to be caries in the body or bodies of the lumbar vertebræ, but not of sufficient extent or in such a position as to cause either great pain or deformity. The so-called "rheumatic lumbago" being due to the disease in the bone.

On January 17th the abscess was opened and its cavity thoroughly cleaned and irrigated. Two incisions were made, one into that part below Poupart's ligament and one parallel and just above it. A large quantity of pus was evacuated together with much membranous-looking *débris* which looked almost like disintegrated omentum. The interior of the abscess was flushed with a large quantity of hot water (no less than eighteen pints being used) and its walls were rubbed with mops of cotton wool so as to remove if possible every particle of tubercular membrane. The part in the thigh was very difficult to clean, as the branches of the external circumflex artery were crossing it in several directions. No bare bone could be felt. The interior of the cavity was then carefully dried and the wound sutured. No drainage tube was used.

The record of the case from this time is briefly as follows:— He had some rise of temperature after the operation, and in the course of a fortnight there was some escape of semi-purulent matter from the lower wound, but there was no evidence of the main part of the cavity being distended. After some suppuration in the thigh, which lasted two or three months, this part of the abscess finally healed and remained quite firm. But while this was consolidating, a sinus formed at the upper incision, and a probe could be passed in the direction of the psoas. The patient, who had been transferred to the Jaffray Hospital, was re-admitted into the General, in November, with a view to further exploration. At that time there was a very large quantity of discharge from the upper incision, and he was greatly emaciated and evidently fast losing ground. The interior of the psoas was explored by enlarging the sinus, but no bare bone could be detected. A counter-opening was made just above the posterior part of the iliac crest; this gave a satisfactory drainage His condition, however, was not improved, and he died on December 7th, 1894, worn out with the effects of profuse suppuration. On *post mortem* examination, a sinus was traced from the upper wound for a considerable distance along the psoas, and there was caries of the body of the last lumbar vertebra and the upper surface of the sacrum, the disc having entirely disappeared. There was also a carious patch and an abscess cavity on the anterior surface of the sacrum.

There are several points in this case worthy of note.

1. The fact that for at least eighteen months before his admission this patient had caries in his spinal column; for there can be no doubt that the pain he had in his back was due to this.

2 For a considerable part of this time an abscess must have been forming in his psoas.

3. In spite of this, he was able to continue his work as a blacksmith until within a fortnight of his admission.

4. The contents of the abscess were of such a nature that their removal could only be effected by rubbing and much flushing.

5. The closure of the abdominal part showed the efficiency with which this cleansing had been carried out.

6. The opening of this in its lower part at a later period suggested that there was some undiscovered bone lesion.

7. The permanent closure of that portion of the abscess in the thigh gave further evidence of the good effects of careful cleansing of the interior of such an abscess.

8. The result of the case, with so much bone lesion in a position from which it could not be removed, could not have been otherwise.

Case 2. J. E. G., aged 5, admitted September 10th, 1894, with a history of limping and some pain in the lower part of the back and on freely moving the thigh. There was slight pain on percussion over the lower part of the spine, but no point where this was particularly painful. There was no bony deformity, but some lordosis. In the region of the left psoas there was a fulness and resistance to pressure, but no fluctuation. A box splint was applied, and the child was made an out-patient. Soon, however, there was an increase in the pain in the back, and deep fluctuation was made out over the left psoas.

The patient was re-admitted on November 28th, and on December 5th the abscess was opened. An incision was made parallel to the outer part of Poupart's ligament, and reaching rather above and external to the anterior superior spinous process. The peritoneum was exposed and pushed upwards and inwards from the iliac fossa until the distended psoas came into view; this was then opened, and a large quantity of thin pus evacuated together with shreds of membranous *débris* from the wall of the abscess. The cavity was carefully cleaned and irrigated, and some iodoform put into that part of it near the incision; it was then dried and the wound closed, and dressed with iodoform gauze.

The child seemed very well that night, and, beyond being somewhat sick, there was nothing to cause any anxiety; but at half-past eleven the next morning he became suddenly very ill. He became of a dusky hue, was very restless, his breathing was very much embarrassed, and his pulse could hardly be felt. He died in fifteen minutes from the onset of the attack.

At the *post mortem* examination the cavity of the peritoneum was found perfectly normal. The left psoas was distended with blood and serum, its walls were about one-sixth of an inch in thickness, and the cords of the lumbar plexus were passing across its cavity; there was caries of the body of the fifth lumbar vertebra, partial destruction of the disc below it, and caries of the upper part of the sacrum. Pus had entered the right psoas, so that this would soon have formed another abscess. A good deal of collapse was found along the posterior borders of both lungs, not very marked in degree, but extending over a large area. The bronchial tubes were healthy, but the pulmonary vessels contained clot, apparently formed *in situ*. The pericardium contained a large amount of serous fluid. The right side of the heart was extensively engorged, the auricle being full of dark clot, and the ventricle clot of a lighter colour. There was a small quantity of red clot in the left side of the heart. The valves were perfectly healthy.

Such a sudden termination to the case was naturally most unexpected and disappointing, and the result of the *post mortem* examination was awaited with much interest. The immediate cause of death was due to an over-distended right heart, this condition being due to two factors—viz., the large area of pulmonary collapse, causing an obstruction to the pulmonary circulation, and the strain on the heart caused by the vomiting after the operation. The presence of a commencing abscess on the right side, and the extent of the bone lesion, were indications that the case was one in which an unfavourable result would have ultimately occurred.

Case 3. A. S., aged 4, admitted October 6, 1893. The history was that of limping and some pain in the lower part of the back on movement.

On examination these facts were confirmed, and in addition we made out some lordosis, pain on pressure over the mid-dorsal region, where there was a slight angular deformity. and a fulness in the region of the ilio-psoas and deep fluctuation over this. On October 11th the abscess was opened by an incision similar to that used in the previous case, and the abscess cavity treated in the same way. A counter opening was however made at the outer border of the erector spinæ between the last rib and the iliac spine. This was done to enable the upper prolongation to be thoroughly cleaned, and was made by cutting on to a finger introduced from the first incision and made prominent in the required position. The wounds were sutured and no drainage tube used. The patient did well and the dressings were changed in a week and again in six days' time; the wounds healed by primary union. When changing the dressings we noticed what is often seen in these cases, viz., some distension of the abscess cavity. This is due to the exudation of blood and serum, and as a rule is soon absorbed and does not give rise to any trouble. Perfect rest was maintained for eight months by means of a box splint, after which the child was allowed to get about. When last seen a few weeks ago he was very well, but as the mother thought his back was not quite so strong the splint was reapplied.

Case 4. T. H., aged 5, admitted September 11th, 1893. The history being that of pain in the back and limping. On examination we found these symptoms together with pain on pressure over the lower part of the spine, lordosis, no angular curvature, but fulness and fluctuation over the right psoas. September 19th the abscess was opened as in the two previous cases, but it was not necessary to push off the peritoneum as the abscess had approached the surface in the position of the incision. A counter opening was made in the same way, and after careful cleaning and irrigation the wounds were sutured. The wound was dressed on the 28th and was looking well. There was some fulness just above the outer half of Poupart's ligament, and the abscess cavity seems to have filled up. The dressings were changed on October 5th when there was as much swelling as before the operation. By the 16th the swelling had very much subsided, and by November 10th this had almost entirely gone. On the 29th a small collection of fluid was found at the seat of the anterior incision, and on the following day a small quantity of pus was let out from here, and a short sinus with three branches thoroughly scraped. The wound was closed, and it healed without further trouble. The patient is now well, and has no symptoms whatever of any spinal disease.

THE MIDDLEMORE LECTURE.

ON OCULAR AFFECTIONS CAUSED BY BLOWS.

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(Continued from page 77.)

I WISH now to deal with the results to the Eyeball itself, of blows received upon it, or its vicinity. These blows for the most part fall directly on the eye antero-posteriorly, or from the outer side, or from below, in consequence of the eye being protected above by the eyebrow and on the inner side by the nose.

Before considering these injuries I wish to draw your attention to the fact that the patient almost invariably sees the blow coming before the impact takes place, and consequently closes the eyes; and I want you particularly to bear in mind that when the eyes are closed not only do the lids fall over the eyes, but the eyes themselves are involuntarily turned upwards at the same time; only by keeping this point in view shall we get an intelligent insight into the peculiar results of these blows upon the eye, and understand why the resulting damage is usually most marked above.

FIG. 1.

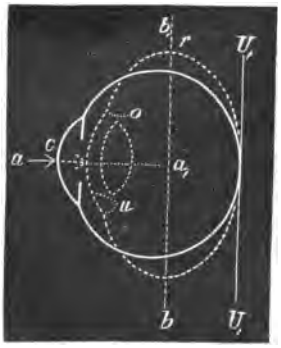

FIG. 2.

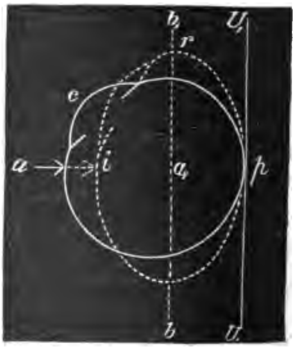

FIG. 1.—CONTUSION OF THE EYEBALL FROM IN FRONT. SCHEMATIC.

The force acts in the direction *a* a_1 upon the centre of the cornea, *c*. By it the eyeball is pressed against the firm background. *U* U_1, and acquires the flattened form designated by the dotted outline. The greatest expansion of the eyeball occurs in the direction *b* b_1, so that the sclera ruptures at *r*. The forcing back of the iris by the recession of the aqueous humour is represented as occurring in such a way that at its lower side. *u*, the iris forms a sac-like protrusion directed backward, while at its upper side, *o*, it is bent straight back.

FIG. 2.—CONTUSION OF THE EYEBALL FROM BELOW. SCHEMATIC. (AS WHEN TURNED UPWARDS.)

The force which acts in the direction *a* a_1 strikes the eyeball beneath the cornea and presses it against the background, *U* U_1, so that it assumes the flattened form indicated by the dotted line. The eyeball suffers the greatest expansion in the direction *b* b_1 so that the sclera ruptures at *r*.*

A reference to the Diagrams will show then, bearing these facts in mind, that the direction of the blow on the eye is not quite antero-posteriorly, but runs in an oblique direction antero-posteriorly from below in front to above posteriorly, *a* a_1, fig. 2.

Now considering the eye as an elastic globe it will be seen that the effect of such a blow is to flatten the eye antero-posteriorly in the direction of the transmitted force *a* a_1; which flattening in this direction is accompanied by a corresponding expansion of the globe in a direction at right angles to this, *b* b_1.

Thus we see that the ocular tunics are most severely strained, and stretched laterally at a point just behind the cornea. This explanation given long ago by Arlt, and recently adopted by Fuchs, best accords with the facts. Now the first effect of applying force to the front of the eye will be obviously to raise the tension in the anterior or aqueous chamber.

Now while the disposition of the iris to the lens offers no obstruction to the normal flow of aqueous fluid forwards from the ciliary processes and vitreous chamber between the lens and the iris into the anterior chamber through the pupil, it is such that any attempt to force the aqueous backwards is at once prevented by the iris acting like a valve, and being applied to the anterior surface of the lens, and so closing this passage. Hence the iris is the first structure to feel the injurious effects of such an injury, and therefore is the one first and most likely to suffer from the blow.

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* Fuchs' *Text-book of Ophthalmology.*

You will observe too that while the iris is supported by the lens at the pupilary margin, towards its attached periphery it has no solid support, having merely the aqueous fluid in the posterior part of the anterior chamber between it and the suspensory ligament of the lens, hence it is here that it is mostly forced backwards (see *u* fig. 1).

EFFECTS OF SUCH BLOWS ON THE IRIS.

MYDRIASIS.

You will readily perceive that the first effect on the iris is to cause great and forcible dilatation of the pupil and considerable pushing back of the iris near its ciliary attachment. Hence mydriasis, or dilatation of the pupil, is the commonest result of such injuries, and is caused either from traumatic paralysis of the muscular sphincter or nerve fibres of the iris from stretching, or from extravasation of blood into the iris tissue; or, as has been found to be very common, from some partial rupture of the fibres of the sphincter of the pupil, to which Hirschberg has drawn attention. On examination, we find the pupil moderately dilated, usually somewhat oval in shape (the long diameter of the oval being invariably vertical, because the iris is most dilated above), and frequently some blood in the bottom of the ant. ch. (hyphæma) from extravasation from the blood-vessels of the iris. We also find that atropine is more or less powerless to dilate the pupil further, and eserine to cause contraction, owing to the paralytic condition of the local structures in the iris. Rarely, a distinct radiating rupture of the iris occurs.

TREATMENT.

Rest in bed for a few days is wise, and the application of a cold water compress, to prevent further hæmorrhage; while locally the application of a solution of atropine gr. iv. and cocain gr. viii. ad ℥ i. is comforting to the patient, by the atropine keeping the iris quiet and the cocaine lessening the tendency to hyperæmia and hyperæsthesia. Some object to atropine that it tends to increase the extent of rupture in the sphincter, if present, though I am doubtful if this often occurs to any extent.

It may be thought that eserine applied locally would be preferable, but this drug causes hyperæmia of the intra-ocular tissues, the iris specially, and greatly increases the danger therefore of further hæmorrhage into the iris tissue and into the anterior chamber. It is, however, a good plan to substitute eserine drops for the atropine at the end of four or five days, if the eye is quiet and danger of further hæmorrhage seems passed; but this should not be prolonged, or the result may be the formation of adhesions of the iris to the capsule of the lens, as the effects of the prolonged use of eserine is often to cause slight iritis, which so results. Personally, I am inclined to occasionally dilate the pupil with homatropine (every three or four days); if continuing the use of eserine. Homatropine hydrobromate gr. iv., ad ʒ i. does well for this purpose, the resulting dilatation passing off in forty eight hours. Eserine S. about gr. ½ or gr. i. ad ʒ i. is strong enough, as a rule, to contract the pupil.

PROGNOSIS.

In twenty-four hours to two or three days the hyphæma will be gone, and in a week or two the eye will probably be quiet and vision may be as good as before, this condition scarcely affecting it adversely; but more or less dilatation of the pupil, which often remains oval in shape, very generally persists permanently, especially if there has been rupture of the sphincter of the iris.

IRIDO-DIALYSIS.

Commonly the iris is torn away at its ciliary attachment (iridodialysis), which is a very common injury. This may be very slight or very extensive, the whole iris having been known to be detached in some cases, and found lying at the bottom of the anterior chamber. Blood is always found in such injury at the bottom of the anterior chamber (hyphæma). In this condition the pupil is flattened and loses its circular shape at the point corresponding to the rupture, which is almost invariably above, where the strain is most felt (*o* fig. 1), and concealed by the upper lid. Vision may be unaffected; diplopia may occur when the eye is not focussed for the object seen.

TREATMENT.

As for the last condition. Here the dilatation of the pupil by atropine may assist somewhat to approximate the edges of the rupture; but only in one or two cases has such injury been known to be repaired, the deformity so caused being therefore practically invariably permanent.

RETROVERSION OF IRIS.

A somewhat rare injury is a complete retroversion of a part of the iris backwards, where it comes to lie on the ciliary processes and adheres to them. It also is invariably found above, for reason previously explained (*o* fig. 1), and causes a coloboma almost identical with that seen after a large iridectomy upwards. Probably in most of these cases there is also a rupture of the corresponding part of the suspensory ligament of lens.

TREATMENT.

Nothing can be done to restore this retroversion, and it should be treated like the previous injury.

PROGNOSIS.

Such an eye may see well and retain good vision, as in the previous injury; but probably the accommodation will be more or less lost from accompanying damage to the suspensory ligament.

In many of these cases a chronic inflammation is set up in the ciliary processes, and the iris being more and more dragged up to the ciliary region, the eye is ultimately lost from chronic cyclitis and shrinking of the globe.

SUSPENSORY LIGAMENT.

Next to the iris the suspensory ligament of the lens is most often ruptured, almost always above (at *o* fig. 1).

When this has taken place partially, there is more or less complete loss of power to accommodate the focus of the eye for near objects; while, in consequence of the lens having lost its support, it becomes tremulous on all movements of the eye, and this tremulousness is transmitted to the iris, which normally lies in contact with and is supported behind by the lens. When, therefore, we find loss of power to accommodate combined with irido donesis or tremulous iris, we may infer a partial rupture to the suspensory ligament to have occurred.

In these cases no recovery takes place, and no treatment is of avail beyond giving relief. The same treatment may be employed as before.

N.B.—Occasionally accommodation is lost from traumatic paralysis of the ciliary muscle, and these cases ultimately recover the lost power at the end of three or four weeks or so, so that loss of accommodation without tremulous iris should not lead us to diagnose rupture of the ligament, or to prognose permanent loss of accommodation, and consequently of useful binocular vision.

SUBLUXATION OF LENS.

If the suspensory ligt. is much ruptured, then there will result more or less displacement of the lens, from loss of its support, in a direction opposite to the rupture—that is usually downward,—so that if the pupil is dilated with atropine, the edge of the lens—which appears as a bright ring if seen by direct light, and as a dark band on ophthalmoscopic examination—can be seen to be distinctly displaced from its usual position, and in some cases this may be so marked that the upper edge of the lens is seen in the undilated pupil. Such a condition causes serious damage to vision, for not only is accommodation lost on near objects, but distant vision is indistinct, partly from astigmation caused by tilting of the lens, and partly from myopia resulting from the lens becoming too convex in consequence of the loss of tension exercised by its suspensory ligament; while, if much displaced, there may be also monocular diplopia added.

PROGNOSIS AND TREATMENT.

Treatment can only be palliative, and may be as before.

In many of these cases the eye is ultimately lost from glaucoma, caused by the displaced lens pressing the iris forwards, and so closing the angle of the anterior chamber, thus preventing the escape of the intra-ocular fluids, while irritation of ciliary processes, from the lens pressing on them, increases their secretion; or the eye may be lost by recurring cyclitis, set up by constant contact of the lens with the ciliary processes. If glaucoma supervene, iridectomy will be required, and if this fails, the lens should be subsequently removed. If cyclitis sets in, the lens should be removed also; and in these cases I am in favour of a previous iridectomy by a small opening and careful and slow removal of the knife to ensure slow emptying of the anterior chamber, otherwise, the vitreous—being no longer kept in place by the suspensory ligament, it being ruptured—at once comes forward into the anterior chamber and, getting in front of the iris, escapes through the wound, displaces the iris backwards, causing permanent irremediable retroversion of the iris opposite the section; which is averted, however, by a previous *small* iridectomy having been performed.

COMPLETE DISLOCATION OF LENS.

The lens may be completely displaced from its attachments, in which case it usually is driven backwards into the vitreous cavity, and may be seen by the ophthalmoscope or by oblique illumination, lying behind the iris, in the lower part of the eye. In such a case the vision will be seriously impaired from loss of the focal power of the lens, the eye being highly hypermetropic, but good vision may be obtained by a strong convex glass (+ 10 D or more).

The eye may remain quiet, and no further trouble result; but in such cases its use is much impaired, as without a glass vision is very imperfect, while a glass cannot be worn probably, because of the resulting double vision, in consequence of it being almost impossible for such an eye to be combined with its fellow properly to obtain binocular vision, objects appearing much larger with it than by its companion, while also there is absence of all accommodation in such an eye. In most cases such eyes are lost ultimately, as previously explained, by glaucoma or iridocyclitis. In this position the removal of the lens is even more difficult than in the preceding. In such cases occasionally the lens, which usually becomes opaque, does not interfere with vision while the patient is erect; falls forward into the pupil and obscures vision whenever the patient stoops. Much more rarely the lens when dislocated falls into the anterior chamber, the pupil being dilated, and the iris pushed back by the blow (*o u* fig. 1). When this occurs, glaucoma speedily sets in and the cornea becomes very hazy, and there is great pain in the eye, which becomes very hard.

On examination the lens is easily detected in the anterior chamber, its margins appearing near the periphery of the iris by oblique light as a bright zone, something like that produced by looking at a large oil globule, while the normal striæ of the lens are plainly seen just behind the cornea radiating to the centre.

It is important to note these striæ, for occasionally a similar appearance is produced, which has a spurious though close resemblance to it, by the vitreous, which comes forward into and fills the anterior chamber through a rupture in the suspensory ligament. But in such a condition, while the bright ring similar to that produced by the edge of the lens is caused by the vitreous, no striæ are found; moreover, not only will glaucoma not be present in this condition, but probably the tension will be distinctly minus.

TREATMENT

Once the diagnosis is made of the lens being in the anterior chamber, eserine should be introduced to contract the pupil and prevent the lens falling back into the vitreous, and steps cannot be too soon taken to remove the dislocated lens by operation, otherwise the patient will not only suffer great pain, but the eye will be lost, or damaged permanently by severe glaucoma. Unlike lenses in the vitreous chamber, those in the anterior chamber can generally be more or less easily and satisfactorily removed by operation.

CATARACT.

In some cases the capsule of the lens is ruptured as a result of the blow, usually at the posterior pole. When this happens, the lens speedily (in a few hours) begins to become opaque from imbibition of the vitreous fluid. In such a case atropine and cocaine drops as before should be instilled every four hours or so to keep the pupil dilated, and prevent iritis being set up by the swelling lens, a wet compress used, and the patient kept quiet in bed; and the resulting cataract may be dealt with at the proper time by needling or otherwise, like traumatic cataract from perforating wounds; and such cases often do as well as other cases of traumatic cataract.

It is said that the lens may become cataractous from molecular changes set up by the blow without any actual rupture of the capsule taking place; but, without denying this possibility, I am strongly of opinion that it is infinitely rare, and that practically cataract always means a rupture somewhere. It may be that the rupture is generally not seen owing to opacity of the lens, and being invariably at the posterior pole and often quite peripheral. A reference to the diagram will easily explain why it is the posterior capsule that we should expect to find ruptured from blows, which force the lens backwards.

RUPTURE OF THE SCLERA.

If the blow is sufficiently severe, the sclera itself may be ruptured. A reference to the diagram will explain why it is that this almost invariably takes place upwards (*r* fig. 2), and generally a little inwards, but occasionally somewhat outwards, the place of rupture usually being 2 to 4 m. behind the cornea, and the rupture concentric with it and 4 or 5 m. in extent. But two other reasons may be adduced why the sclera is usually ruptured near the cornea. One is that about here this coat is the thinnest, and another is that it is further weakened here by being perforated at this point by the anterior ciliary arteries. When the sclera is ruptured, the iris is usually prolapsed into the wound, and occasionally the ciliary processes also; while in some cases the anterior part of the retina is also found to be prolapsed with the other tissues.

PROGNOSIS AND TREATMENT.

In such a case, the proper treatment is to make a flap of the overlying conjunctiva and expose the wound, and excise the prolapsed iris without delay, and free the wound from all prolapsed tissue if possible. This done, both eyes should be closed, and light pressure made with a pad of Gamgee tissue, and a bandage applied so as to obtain as complete immobility of the eye as possible and promote healing. If, in consequence of the vitreous keeping the wound open, it cannot be properly closed otherwise, a fine silk suture should be inserted in the sclera quite superficially, or in the episcleral tissue, so as to close the wound effectually. If only the iris has prolapsed, the case may do well and a good eye result, with however a coloboma resulting from the excision of the iris. I have seen such cases result with good vision and even perfect accommodation—the ligament of the lens being unruptured. If the ciliary processes prolapse, they should be dealt with in the same way as the iris; and the same would apply to retina or other tissue found in the wound, as no good can result from leaving prolapsed tissue incarcerated in the wound. When the ciliary processes prolapse, the eye is often lost by resulting cyclitis leading to shrinking of the globe, and detached retina; and this is almost certain to result if the retina itself has prolapsed into the wound. If after such an injury the eye remains painful at the end of a week or ten days, and there is a circum-corneal zone of vascular injection persisting, and the eye becomes soft and is tender on pressure over the ciliary region, such an eye should be excised without further delay, as it is just such eyes which are liable to set up sympathetic ophthalmia in the other eye. The same advice would apply if these symptoms persist after the previously described injuries. It should be borne in mind that sympathetic ophthalmia is by far the most commonly met with during the first three to five weeks after injury of its fellow.

EXTRUSION OF THE LENS.

In these cases of rupture of the sclera it is not uncommon for the lens to be extruded through the rupture at *r* fig, 2, and to be found lying under the conjunctiva, when it must be removed while the wound is dealt with as before. Even in this severe injury the eye may recover well, and good vision be obtained by means of a cataract glass.

Fuchs, in his text-book, records the unique case of a farmer in whom this accident took place, first in one eye, and some time subsequently in its fellow, being in each case caused by a blow from a cow's horn; while in each eye good vision was obtained by means of a glass, and maintained. Occasionally the lens is extruded through the conjunctiva also, and may be found lying under the lid, or may have fallen out, but the conjunctiva, being very elastic, is not usually ruptured. Except in this condition the conjunctiva is never ruptured by blows.

The cornea is never practically ruptured as the result of blows; though such a result has been recorded I do not remember to have seen it myself, and should generally expect that there had been a wound, by some means, when this is present.

DAMAGE TO POSTERIOR STRUCTURES.

I now wish to say a few words as to damage to the posterior structures of the eyeball, as it will hardly be supposed that they alone would escape injury. From what I have already said it will be seen that the effect of blows is most severely felt in the anterior part of the globe; and bearing in mind the high vascularity of the choroid and ciliary processes, and even the retina, it will be readily understood that as a result of these injuries it is common for blood to be effused in this region, probably at *a i*, the point of impact, or *r* fig. 2, when it readily permeates the vitreous, and so causes it to become opaque (hæmophthalmos) and prevents the posterior structures of the eye from being seen with the ophthalmoscope. Occasionally such effused blood permeates behind the lens and between it and the vitreous, and may be seen there. The ophthalmoscope often reveals effusion of blood from the anterior part of the eye into the vitreous when nothing more can be made out, therefore in all cases of blows on the eye the ophthalmoscope should be invariably used to ascertain if such a condition is present. If the effusion is not too great, after a few days it sufficiently absorbs to enable the observer to see the posterior structures; when, in addition to hœmorrhagic effusions in the anterior part of the choroid, it is often found that the structures at the posterior part of the fundus are damaged also.

The commonest injury seen is rupture of the choroid, generally at the posterior pole (*p* fig. 2), opposite the point of impact, above the disc and concentric with it; there may be one or more such ruptures. That the retina is not also ruptured is shown by the vessels of the retina passing over the rupture, and that this is most commonly the case shows that the choroid is more easily damaged than the retina. In such cases there will probably be a blind area in the F. V. corresponding to the rupture, and if this extends to the macula direct vision will be damaged, because the percipient layer of retina lies on the choroid and is sure to be damaged also. In some cases the retina is also found to be ruptured.

Occasionally though no rupture is seen immediately after the injury, some five weeks later large areas of the choroid may be found to be undergoing atrophy as the result of bruising of the choroid, with accompanying failure of vision in the areas of the F. V. corresponding with the seat of injury.

TREATMENT.

In all these cases dark glasses should be worn for some weeks, and it may be well to instil atropine to keep the ciliary muscle inactive, because in action it pulls on the choroid. Rest from use of the eyes should be enjoined, and it is wise to keep the patient in bed for a week or ten days with both eyes bandaged, and a wet compress to lessen the tendency to intra-ocular hæmorrhage, especially if there is rupture of the retina, which there may easily be at the periphery where it cannot be made out, as such cases are apt after a time to be found to have detachment of the retina. It is most important therefore to give the initial rupture every chance of healing to prevent further intra-ocular hæmorrhage.

My experience convinces me that such injuries are very commonly the cause of subsequent detachment of the retina, in many cases of which I have been able to find no other cause than a history of a previous blow, at the time not much regarded; and as this deplorable condition is hardly amenable to any kind of treatment and generally ultimately ends in blindness by the retina becoming more and more detached till completely separated, it is most important, if possible, to prevent its commencement in the early stage of injury.

I would specially point out that floating muscæ, after injuries, almost surely indicate an intra-ocular lesion; while the persistent complaint by the patient of flashes of light, or coloured areas, indicating, as they do, irritation of the retina, should always be seriously regarded as indications of possible grave injury. The fact that letters looked at appear distorted or twisted, and do not appear to be in line, is very suggestive of detached retina being present; while loss of perception over a large part of the F.V. is practically diagnostic of this having occurred; and such a loss is most often found above because detachment is most common below, in consequence of the fluid collecting there by gravity. The ophthalmoscope at once reveals the lesion.

It is supposed that the detachment in these cases is caused by a rupture in the retina not healing, allowing the fluids of the vitreous—which body normally supports the retina—to filtrate between it and the choroid, and this condition, once started, almost invariably, it may be slowly, progresses. Usually this is only found in one eye; but I have a case in my experience unique, in which both retinæ are detached by blows, but as there is a history of several blows, probably not by the same injury.

A specimen of an eye recently excised by me, in consequence of its immediate and complete destruction as an organ of vision by a blow, I now hand round, as it shows well how severely such an injury may affect the eye, if the force is great, without causing rupture of the sclera. You all see that the lens is dislocated and has actually passed through the choroid, lying between it and the sclera; the retina is completely detached from the choroid by hæmorrhage, probably from the latter; while the choroid is also detached from the sclera by hæmorrhage. Detachment of the choroid from the sclera is only *very* exceptionally diagnosed by the ophthalmoscope, because usually, as in this case, the retina is at the same time detached from the choroid, and therefore all evidence of it is incapable of being observed.

Before closing, I would say that even after slight blows on the eye there is more or less temporary obscuration of vision, lasting, it may be, only a few moments, but in some cases persisting longer, but unaccompanied by any visible changes seen by the ophthalmoscope. In such cases a perimeter shows that there is contraction of the F.V. This condition is called traumatic anæsthesia of the retina, and usually in a few days recovers; though very rarely some permanent depreciation of vision persists. In some such cases what has been called commotio retinæ or traumatic edœma of retina is seen with the ophthalmoscope, the retina appearing somewhat hazy around the disc and macula for a few days; but this soon passes off, and good vision returns. In such cases dark glasses should be worn, and rest enjoined for three or four weeks.

In conclusion, I wish to say that my thanks are due to my colleagues, Mr. Owen and Mr. White, for permission to show cases and for loan of diagrams, and to our House Surgeons, Mr. Sinclair and Mr. Henry, for much valuable assistance in preparing diagrams, etc., etc. No one is more conscious than myself of the very imperfect manner in which I have placed the subject before you, partly owing to being unaccustomed to the arts of either lecturing or teaching in a hospital like this, where no such demand is made upon us, and partly because I wished to cover, as far as possible, the whole ground of the results of blows, and so have been compelled of necessity to deal very shortly with many matters well worthy of a more extensive treatment; but if I have done anything to increase your interest in our speciality, or added in even a small degree to your appreciation of the dangers resulting from blows on the eye, I shall feel well repaid for any labour entailed in the delivery of this lecture.

ON CRANIOTOMY.*

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GENTLEMEN,—

This operation, which consists of opening the cavity of the fœtal head, evacuating its contents, and subsequently extracting it through the maternal passages, is one of the oldest in the history of our art.

It is mentioned by both Hippocrates and Celsus and by other Greek and Latin authors, also by the Arabian physicians; indeed, before the introduction of forceps it was almost the sole resort of the obstetrician in cases of difficult labour due to obstruction to the passage of the head, and the use of the word "embryulcia," as synonymous with craniotomy, shows this, the literal meaning of embryulcia being extraction of the fœtus, and not mutilation.

We will firstly consider the conditions which necessitate the performance of craniotomy. I will enumerate those mentioned by Galabin in his text-book of midwifery, which may be looked upon as a standard authority. These are:—

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* Paper read before the Queen's College Medical Society, December 12th, 1894.

Great disproportion between the head and the pelvis, obstruction caused by tumours, or by cancer of the cervix. In rare cases, obstruction due to rigidity of the cervix, inflammatory deposits, or cicatrices. Dangerous conditions of the mother, as eclampsia, calling for rapid delivery, when forceps or version is not sufficient to meet the case.

Now the range of the operation depends very largely upon whether the child is living or dead. If the child is already dead, then the operation may be performed whenever the delivery would be rendered easier and the mother's recovery more certain by doing it. If, on the other hand, the child be living, the range of the operation becomes very limited, and with very rare exceptions it should, in my opinion, only be performed in certain cases of contracted pelvis. In suitable cases the mother's life may be saved, almost with certainty, by this operation; whereas, by the only possible alternative, it may be very seriously imperilled; and, in my opinion, the interests of the mother are paramount.

The condition which necessitates craniotomy with a living child is one of contracted pelvis, when turning and forceps are both of no avail, and when the amount of contraction is not so great as to render craniotomy a dangerous operation, and one whose mortality would approach that of Cæsarean section.

Such pelves may be said to have a lower limit with a conjugate of about 2¼ inches, but in an upward direction it is not possible to fix a limit, as it not infrequently happens that craniotomy may be necessary in a woman who has previously had a living child, the amount of diminution of the conjugate being small, but the difficulty arising from an unusually large and well-ossified head; thus, the former child may have been a female, the present one a male, or the difficulty may arise from an unusual position of the head which cannot be remedied.

As regards the other conditions which have been mentioned, it appears to me that it can never be justifiable to craniotomise a living child in a case of cancer of the cervix, as this is a disease which will inevitably prove fatal to the mother in a comparatively short time, and in consequence the child's life assumes a relatively greater importance.

When we come to consider the objections raised against craniotomy, we find that no operation has been more vehemently objected to; and here we leave the domain of surgery and trench upon that of religion and morals.

No one can deny that craniotomy has been performed with unnecessary frequency in the past. Thus, according to Playfair, during the mastership of Dr. Labbat at the Rotunda the forceps was never once applied in 21,867 labours; and though he does not mention the number of cases in which craniotomy was performed, it must have been very large. Later, in the years 1840 to 1847, the percentage of craniotomy cases was ·79.

Recent statistics show a much less percentage than this. Thus, in the Guy's Hospital charity in the years 1863 to 1875 the percentage was only ·07, though this is probably below the general average.

Other obstetricians have gone to the opposite extreme, and some have gone so far as to assert that craniotomy should never be performed on the living child. There is no doubt in my mind that to accept this dictum would involve the loss of many valuable maternal lives, and although the adoption of aseptic principles in abdominal surgery has much reduced the mortality of Cæsarean section and restricted the limits of craniotomy, still there are cases in which the latter operation will be the most eligible, and it is necessary to study the best means of performing it with success.

I think the most sensible view taken of the question is that of Spiegelberg, and I may be pardoned for quoting from him:—

"Some leading accoucheurs have declared that perforation should never be employed where a child was obviously alive, a principle which the majority of French and German accoucheurs accepted on the ground of æsthetics and humanity, though the latter is only apparent. The more practical English obstetricians never went to this length, they held fast to the principle that the child must always be sacrificed where the question lies between its life or that of its mother; and this is the stand-point which is accepted to day; perforation of a living or of a dead child is a justifiable measure when necessary."

In Roman Catholic countries practice has been influenced by the dictum of that Church, that it is not lawful to destroy the child in order to save the life of the mother.

The alternative operations may be said to be Cæsarean section (including Porro's operation), symphysiotomy, induction of premature labour. The use of forceps and version will not be considered here, as it is taken for granted that one or both of these measures will have been tried, if they appear at all likely to be successful, before proceeding to craniotomy. The main issue is, when the child is living, craniotomy *versus* Cæsarean section.

The discussion of this matter might easily occupy a whole paper, but I will, on the present occasion, content myself with stating my own views. These are that, when the fact that such an amount of pelvic contraction exists as will preclude the possibility of delivery of a living child at term is known before labour commences, then—the consent of the patient and her husband having been obtained—arrangements may be made to perform Cæsarean section at the most favourable opportunity. This is generally considered to be as soon as labour pains commence. If, on the other hand, the woman has been some hours in labour, and attempts have been made to deliver by forceps or version, then I am quite convinced that craniotomy offers very much the most favourable prospect for the mother, and is the operation to be performed, provided that the amount of pelvic contraction is not so great as to render delivery after perforation a very difficult and dangerous proceeding.

In the first class of case, where the pelvic contraction is known to exist in the earlier months of pregnancy, the induction of premature labour may be considered, and is probably the best method to adopt.

Symphysiotomy is an operation which was practised in the last century. It then fell into oblivion, but has lately been revived. I have no personal experience of this operation, but, according to the medical papers, it is not free from subsequent complications. In some cases incontinence of urine has resulted from tearing of urethra or bladder, and in others difficulty of locomotion from failure of the bones to unite again properly. The application of this operation should be strictly limited to cases in which a slight increase of the conjugate (not more than an inch) will be sufficient to allow the extraction of the head by the forceps. If it be done in cases having a greater pelvic contraction than this, the results are sure to be disastrous.

When once craniotomy has been decided upon, to wait for the death of the child before commencing the operation is absurd—it greatly increases the risk to the mother, and has nothing to recommend it except misplaced sentiment.

In looking up my notes, I find that I have performed craniotomy four times. In two of the cases the child was unmistakably dead, the cord being prolapsed and pulseless; in the other two, although no fœtal movements were felt, there was no such undoubted evidence of the death of the child, and we will take it for granted that in these two cases the child was alive. Three of these cases occurred in the maternity department of the Queen's Hospital, and one was a Lying-in charity case.

I have under my charge, in connection with these two appointments, an average of 500 cases of midwifery per annum, and these are all the cases of craniotomy performed during the past five years. Thus there have been only two cases of craniotomy on living children in 2,500 cases, or ·08 per cent. This proportion will, I think, be found as low as in any recorded statistics. In each case the mothers made an uninterrupted recovery.

I have never performed craniotomy in private practice, though I have on more than one occasion regretted that I had not done so when I have delivered, after using very great effort, with forceps; and although the patients in each of these cases have recovered, yet the convalescence has been retarded, and some pyrexia has followed from the severe contusions to which the soft parts have been subjected.

I have on more than one occasion been sent for to perform craniotomy, but have succeeded in delivering with forceps. I will now give notes of the cases:—

The first occurred on January 11th, 1891. The patient had had three children previously, all premature, dead, and the forceps having to be applied in each case.

When first seen the patient had been in labour twenty-four hours, the waters had broken ten hours. Dr. Snell, Obstetric House Surgeon, was called, and endeavoured to deliver with forceps; this failing, he performed version with no more success. The feet of the child were protruding and the cord was pulseless, but the head could not be made to engage in the pelvis, and marked narrowing of the brim could be felt. The head was perforated behind the ear, and after evacuating the brain very great difficulty was found in delivering the head; this was ultimately effected by hooking the crotchet into the foramen magnum, and making strong traction on that and on the feet at the same time. Patient was of typically ricketty appearance, having prominent forehead and bowed tibiæ.

Dr. Snell and myself both made measurements of the pelvis, and each deduced the diagonal conjugate at 3⅙ inches, which would give a true conjugate of not more than 2½ inches. Patient made a rapid recovery.

I directed the patient, if ever she should become pregnant again, to present herself at the Hospital with a view to admitting her and inducing labour, or, if she had gone too far for that, performing Cæsarean section, but I have never seen her again.

Case 2 occurred in the Lying-in charity practice. The previous history of this case is interesting:—She had had eight children. At the first confinement, thirteen years ago, she was attended by a midwife. She was in labour three days, and shortly afterwards a vesico-vaginal fistula formed. She had undergone an operation for this at the Women's Hospital, but it had proved unsuccessful, and she had suffered from complete incontinence of urine during the whole of this time. Of the eight children four had been born alive, of whom two only—and these females—survived. On the other four occasions she had chloroform and forceps, and the children were stillborn.

When I saw her she had been eight hours in labour, and the os had been fully dilated two hours. On examination, there was a vesico-vaginal fistula admitting index finger. Distinct projection of the sacral promontory and narrowing of the conjugate could be felt, and the head, which was well ossified, could be felt free above the brim. Patient being placed under chloroform, I applied the long forceps and used strong traction, but with no result. I then perforated and evacuated the skull. I applied Simpson's cranioclast, but it slipped off. I then applied ordinary forceps, and with some little difficulty delivered the head. Some difficulty was experienced in delivering the body. The child was a male and well developed.

Case 3 occurred on February 5th, 1893, in the Queen's Hospital maternity. Patient had had two children previously, the first small, male, born without assistance; at the second I was called in by the practitioner who was attending, and delivered with difficulty by the forceps. On the present occasion she had been in labour thirty-six hours, water had probably been ruptured twelve hours. Mr. A. R. Green, Obstetric House Surgeon, was sent for, and applied forceps without avail.

On examination, distinct narrowing of brim could be felt, and head could be felt free above brim, and could not be made to enter it with forceps. Head perforated, attempt made to deliver by Simpson's cranioclast. This did not hold the skull firmly and slipped off, and the cephalotribe was then applied and delivery easily effected Child male, well developed.

Case 4. Queen's Hospital case. Seen August 25th, 1893, 9 a.m. Patient had had eight children. She stated that "child had had to be killed on four previous occasions." She was seen by Mr. Orton, Obstetric House Surgeon, at 7 a.m.; the cord was then prolapsed and pulseless, and the head could be felt above the brim. Forceps were tried, but without avail.

On examination, distinct narrowing of pelvis could be felt, conjugate being estimated at not more than 3¼ inches. The head could be felt above the brim, not engaged, and a distinct dent could be felt in the parietal bone opposite the sacral promontory.

After perforation and evacuation the child was delivered with ordinary forceps, and proved to be a male.

As regards the methods of performing the operation, full instructions are laid down in the text-books; but there are one or two points to which I should like to draw attention. Firstly, the choice of a perforator. There are two instruments commonly in use—Simpson's and Oldham's; and I think anyone who has had experience of both will unhesitatingly give the preference to Oldham's. It affords a much firmer hold to the hand, and can be easily manipulated and the blades separated by one hand, whereas Simpson's requires the other hand, or assistance from a bystander, to press back the catch before it can be opened. I would especially impress upon you the extreme importance of the rule that the fingers of the left hand should never be removed from the blades of the perforator, so as to guard it during the whole process.

Perforation of the after-coming head as usually performed, behind the ear, is a difficult proceeding, as, in the first place, it is impossible to place the point of the perforator at any other than an acute angle to the surface of the bone to be perforated, and consequently it is very apt to slip; and secondly, the bone at the spot chosen, which is usually the mastoid process of the temporal, is much thicker than the vault of the skull. In any subsequent case I should be disposed to perforate in the alternative site—viz., the roof of the mouth.

I think all authorities are now agreed that it is better to proceed at once to extraction of the head after perforation. The older writers advised that after perforation the case should be left to nature for as long even as 24 or 36 hours.

I have never found it necessary to wash away the brain substance with a syringe, and think that if care be taken to make a good hole and to break up the brain with the perforator or the finger, that will be sufficient.

As regards the numerous methods which may be adopted for extraction of the perforated head, I would at once exclude turning, as offering no distinct advantage, and being dangerous because of the possibility of injury to the uterine wall of the broken edges of bone. In cases of moderate contraction of the pelvis, the ordinary long forceps will be found to answer very well; but if they are used, the left hand should carefully examine, as traction is being made, to see that they are not slipping off, and to guard the edges of the bone around the perforation. Craniotomy forceps will answer very well if care be taken to get a good hold of the skull, preferably of the occipital bone. I have found that Simpson's cranioclast with separate blades does not so firmly hold the skull as the ordinary craniotomy forceps.

I should be loth to resort to the method of removing the vault of the skull piecemeal by craniotomy forceps in cases where the amount of pelvic contraction was considerable, and should much prefer to use the cephalotribe if I could not deliver by either of the methods I have mentioned.

The crotchett is not a good instrument for ordinary cases, as it is liable to slip and injure the mother or the operator; but if used, the left hand should be applied to the outside of the skull, opposite to the spot at which the crotchett is applied in the interior.

In the case of extraction of the after-coming head after perforation, I found the crotchett extremely useful; and it is also a good instrument for extracting the separated head after decapitation.

SOME REMARKS CONCERNING TRACHEOTOMY ON CHILDREN.

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TRACHEOTOMY on children differs so much from the same operation performed upon adults, not only as regards its results, but also as regards the ease of its performance and the conditions calling for it, that I have thought it desirable to practically limit my present remarks to those cases, in which the operation was done upon children under 12 years of age. From May, 1893, to October, 1894, during which time I was Resident Surgical Officer, tracheotomy was performed at the General Hospital upon children under 12 years of age twenty-five times. In the great majority of cases I did the operation myself, while in the remainder it was done under my immediate supervision. I append a table giving some of the more important details of each case.

	Age of Patient.	Disease.	Date of Operation.	Tube left out.	Result.
1	8 months	Membranous Croup	Oct. 11, 1893	——	Died Oct. 22
2	1 year	„	Nov. 16, 1893	——	„ Nov. 18
3	14 months	„	Aug. 8, 1894	——	„ Aug. 8
4	19 „	„	Sept. 2, 1894	——	„ Sept. 2
5	2 years	Scald of Larynx	Mar. 6, 1894	Mar. 19	Cure
6	2 „	Membranous Croup	Aug. 30, 1893	——	Died Sept. 1
7	2 „	„	Apr. 26, 1894	——	„ May 3
8	2 „	„	Jan. 8, 1894	——	„ Jan. 9
9	2½ „	Scald of Larynx	Oct. 6, 1893	Oct. 10	Cure
10	3 „	Membranous Croup	Oct. 10, 1894	Oct. 14	„
11	3 „	„	Jan. 15, 1894	——	Died Jan. 16

	Age of Patient.	Disease.	Date of Operation.	Tube left out.	Result.
12	3 „	„	July 2, 1893	July 14	Cure
13	3 „	„	Jan. 2, 1894	Mar. 5	„
14	3 „	„	Dec. 9, 1893	Feb. 4, '94	„
15	3½ „	Diphtheria	Sep. 22, 1894	Oct. 19	„
16	4 „	Membranous Croup	Jan. 22, 1894	Feb. 9	„
17	4 „	Diphtheria	Feb. 13, 1894	——	Died Feb. 15
18	5 „	„	Mar. 28, 1894	——	„ Mar. 28
19	5 „	„	Feb. 16, 1894	Feb. 28	Cure
20	6 „	Membranous Croup	Jan. 18, 1894	Feb. 1	„
21	6 „	„	Mar. 3, 1894	Mar. 12	„
22	6 „	„	May 9, 1894	May 16	„
23	7 „	„	Feb. 15, 1894	Feb. 20	„
24	9 „	Catarrhal Laryngitis	Jan. 17, 1894	Feb. 2	„
25	10 „	„ occurring during typhoid.	July 10, 1894	.	Tube still in

From this table it will be seen that of the 25 cases 14 were cured, 10 died, and 1 still has the tube in. Excluding, for the moment, this last-mentioned case, we find that fourteen patients were cured and that ten died, which gives 58·3 per cent. of recoveries. But this number contains two cases of scald of larynx and one of laryngitis, in which no membrane was seen, and which is consequently put down in the table under the heading of "catarrhal laryngitis." It is a well-known fact that neither of these last conditions is nearly so fatal as membranous croup, which is by far the most common condition calling for tracheotomy in children. Subtracting, therefore, these three cases, it appears that, out of twenty-one children under 12 years of age operated on for membranous croup or diphtheria, eleven, or 52·3 per cent., recovered. Of eight patients 2 years of age or under, only one recovered; and this one was suffering not from membranous croup, but from a scald of the larynx. But if children of more than 2 years of age are taken as a separate class, the results are very different; for out of sixteen cases operated on, thirteen were cured, giving 81·2 per cent of recoveries. Again, taking only cases of membranous croup or diphtheria in children of more than 2 years of age, we find that fourteen cases were operated on, and that of these eleven were cured, giving 78·5 per cent. of recoveries.

Comparing these with other statistics, I find that Sir George Buchanan operated for membranous croup in fifty cases, of which nineteen were cured, giving 38 per cent. of recoveries,* and that Mr. Howard Marsh operated on fifty cases with eight recoveries, or 16 per cent.† The most complete statistics that I have been able to find are those of Fischer, of Hanover, and they seem so important that I venture to give them with some fulness.‡

From January, 1884, to September, 1893, there were admitted into the hospital at Hanover 1,510 cases of diphtheria, and upon 1,000 of these tracheotomy was performed No distinction is made between diphtheria and membranous croup, and in all cases the high operation was performed, the condition calling for it being urgent dyspnœa, without reference to age or complications. In 1885, when there was no epidemic of diphtheria or scarlet fever, there were 48 per cent. of recoveries. In 1886 and 1887 there was a severe epidemic of scarlet fever and the recoveries fell to 27 per cent. In 1888 and 1889, when there was an epidemic of diphtheria, the recoveries were 30 and 31 per cent. respectively. When this epidemic died away, the recoveries rose to 39 per cent.

Taking all these cases together without regard to the prevalence of an epidemic, the results show 37 per cent. of recoveries. But eliminating the four years of epidemic and regarding the remaining six years as the normal condition of affairs, Fischer gives 605 operations with 249 recoveries=41 per cent.

The same author mentions 4,493 cases of tracheotomy for diphtheria occurring in the practice of other German surgeons, with 30·4 per cent. of recoveries. Of these last figures, however, no details are given.

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* Transactions International Medical Congress, 1881, vol. iv., p. 207.

† St. Bartholomew's Hospital Reports for 1867, p. 231.

‡ Deutsche Zeitschrift für Chirurgie, Nov., 1894.

These figures of Fischer's show in a remarkable manner the dependence of the results of tracheotomy for diphtheria upon the type of the disease, proving, as they do, the very greatly increased mortality when there is an epidemic of scarlet fever or diphtheria existing at the time. But there are, in my opinion, two other main conditions, apart from the age of the patient, upon which the results of the operation for diphtheria depend. They are—

1. The existence or not of pneumonia.
2. The extent to which the symptoms of asphyxia have been allowed to progress.

As regards the first of these, I should say that when there are urgent symptoms of laryngeal obstruction in a case of diphtheria or membranous croup, even though pneumonia be present, tracheotomy should be performed. If the patient be left without operation, death is practically certain to take place; while, if the trachea be opened, there is some chance of the pneumonia resolving, the obstruction having been relieved.

As regards the second of the above conditions, I hold that tracheotomy should be performed early, and consider that the following are quite sufficient indications for operation:—

1. Well marked retraction, both costal and episternal.
2. The fact that the symptoms are increasing in severity, despite efficient medical treatment.

At this stage the patient is flushed, is restless and struggles for breath. There is little or no cyanosis, and the heart is acting well. Now is the time for tracheotomy, if there is no improvement under medical treatment. Unfortunately cases are very often sent up to hospital at a much later stage than this, when the patient is lying quite quiet, semi-conscious, and cyanosed, with a failing heart and engorged lungs. It is such cases as these which to a large extent account for the high death-rate following operation; but I would not hesitate to operate in all such cases, and my opinion is strengthened by the result obtained in case No. 14 in my list. This patient was a little girl, aged 3 years, who was brought to Hospital apparently in the last stage of asphyxia from membranous croup, and who was so far gone, that an opinion was expressed that no operation should be done, as the case seemed quite hopeless. However I opened the trachea, had to do artificial respiration for a time, and the child recovered.

It is a point often disputed, as to whether chloroform should be given to these patients or not. For my own part, I act on the rule that, when the patient is restless and struggling, the operator is aided by anæsthesia and the patient is benefited by the relaxation of laryngeal spasm. On the contrary, when the child is cyanosed, quiet, and semi-conscious, chloroform is dangerous and is not indicated, for there is little or no struggling produced by the operation, even without an anæsthetic.

At the present day, now that such methods as operation by the trocar and canula and by the galvanic cautery have been, and I hope finally, put aside, but little remains to be said as to the exact method of performing tracheotomy; but still there are a few points to which attention may be called:—

1. The treatment of the thyroid isthmus. The rule generally laid down is that the isthmus should be drawn down, the deep cervical fascia should be nicked transversely and the trachea opened above the isthmus. This is easily done in adults and older children, but, in a young child with a short fat neck, I never hesitate to completely divide the thyroid isthmus down the centre. As a rule the bleeding is slight, but, if it should be at all severe, it is the work of a moment to catch up each end of the divided isthmus with a pair of Spencer Wells forceps. This method is more rapid, more easy, and gives a much better exposure of the trachea than the method of pulling down the isthmus.

2. If practicable, the trachea should not be opened till bleeding has ceased. But there is not always time to wait for this and, if such be the case, the trachea should be found by touch and opened at once. When this has been done all bleeding immediately ceases, and I have never seen any harm

result from the entrance into the trachea of the small amount of blood which is in the wound at the time the trachea is opened.

3. A bi-valve silver tube with a movable shield and of as large a size as possible should be used. The movable shield makes the tube fit better and lessens the tendency to ulceration of the tracheal mucous membrane from the pressure of the end of the tube. As I have said, a large tube should be used; for though with a smaller sized one the child may have no retraction and be of a good colour, yet the expansion of the chest is not sufficiently free to get rid of the engorgement of the lungs. Anyone who has noticed how partial the patient's relief is when a small tube is put in at the time of operation, and how complete it is when a larger one is substituted will, I think, agree with this.

4. The pre-tracheal fascia should be cut cleanly through, and the operator should be careful not to strip it up from the trachea. Dr. Wilks* mentions three cases of fatal emphysema of the mediastinum following tracheotomy, the air having apparently made its way down beneath the pre-trachial fascia. I have myself seen a case of a man, aged about 50, upon whom tracheotomy was performed for œdematous laryngitis and who died suddenly four hours afterwards, there being found, *post mortem*, emphysema of the mediastinum with left pneumothorax.

After operation, the patient should be put in a tent near the fire; but I am not in favour of the use of the steam-kettle. An atmosphere laden with moisture is debilitating, and, for my own part, I have rarely seen a case in which the use of steam has benefited the patient. A full amount of liquid food should be given by the mouth, unless fluids are returned through the tracheotomy tube, in which case—and also occasionally when the pharynx is scalded—the nasal tube should be used. In some cases the presence of a silver tube in the trachea causes great irritation, and, this being so, the advice is often given that a soft rubber tube should be substituted. This certainly causes less irritation; but it has two great disadvantages—1. The edges of the wound, in a long-standing case, are very apt to contract, so that, after a time, a smaller tube has to be put in. This happened in Case No. 25 in my list, the wound having to be forcibly dilated and a silver tube re-inserted. 2. A tracheotomy tube is always liable to become plugged with a pellet of mucus or a piece of membrane. This does not matter when a double silver tube is used, as the nurse can at once take out the inner tube; but in the case of a rubber tube this is a real danger, and the nurse should be instructed, should a sudden blockage of the tube occur, to cut the tapes, take out the tube, and insert a pair of dilators into the wound. Such a plugging of the tube occurred in Case No. 14, and the necessary measures were taken only just in time.

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* Guy's Hospital Reports, 1860, p. 135.

At the end of a week, or in some cases before, an attempt should be made to leave out the tube. This should be done gradually, so that the child should become accustomed to breathe through the larynx again. In my fourteen cases of recovery the average time for the tube to be in was 18·5 days, the shortest time being 4 days and the longest 61. But whatever care is taken to try and make the child breathe through the larynx, cases will sometimes occur in which the tube has to be worn for months or even permanently. The chief obstacles to the restoration of natural respiration are—

1. Fright.
2. Presence of granulations about the wound.
3. Stenosis of larynx.
4. Impairment of function of laryngeal muscles.
5. Attacks of œdematous or catarrhal laryngitis.
6. Intercurrent diseases.

To consider each of these in turn:—

Fright.—For the first few minutes after removal of the tube, breathing is carried on through the tracheal wound; but directly the edges of the wound begin to come together during inspiration, the child feels the slight obstruction to respiration and becomes frightened. A spasm of the constrictor muscles of the larynx occurs, and the tube has to be replaced. This may occur time after time, and is best overcome as follows:—Use a tube with an opening on the convexity, and at intervals plug the mouth of the tube for some minutes at a time. This compels the patient to breathe through the larynx without noticing, and generally succeeds.

Granulations may form in a mass at the junction of the trachea and larynx, or round the trachea on a level with the wound. The treatment should be—

1. Preventive: *(a)* Use a well-fitting tube with a movable shield. *(b)* Leave out the tube as soon as possible.
2. Curative: Touch the granulations with silver nitrate. If a mass of granulations has formed at the junction of the trachea and larynx, intubate from the mouth, or pass a flexible tube from the wound up through the rima glottidis.

Mr. R. W. Parker* quotes a case of death from asphyxia fifteen days after removal of the tube. *Post mortem* there was found a mass of granulations on the tracheal aspect of the wound, the external part of the wound having healed He gives as the symptoms of this condition dyspnœa, especially at night, coming on when the wound has apparently healed. No. 15 in my list I look upon as a case of this nature, for the child developed severe nocturnal dyspnœa fourteen days after the tube had been left out, and when the wound had apparently healed, For three nights dyspnœa was so marked that it looked as though the trachea would have to be re-opened; but this was not the case, and in a fortnight's time the breathing was quite normal again.

Stenosis of Larynx.—This may vary from a partial adhesion of the cords to complete blocking of the larynx from a cicatricial mass. In the former cases it may be possible to dilate the rima glottidis with some form of dilator or by intubation. In the latter, thyrotomy should be performed and an attempt made to cut away the cicatricial tissue; but this may not be successful, and then the tracheotomy tube must be worn permanently.

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* *Lancet*, 1885, vol. i., p. 241.

Impairment of Function of Laryngeal Muscles may take one of the following forms:—

1. Temporary paralysis of muscles from disease.

2. Diphtheritic paralysis of laryngeal muscles. Is more prone to affect the abductors of the cords than the adductors, hence the dyspnœa (Semon).*

3. Tracheotomy mars the perfection of coincidence between the actions of the laryngeal muscles and those of inspiration and interrupts their usual rhythm (T. Smith).†

The treatment of these three conditions is the same, viz., to wait, for the muscles will regain their function in time.

Œdematous or Catarrhal Laryngitis.—Occasionally one of these conditions occurs as the result of the air passing through the larynx. This latter occurred on two attempts to remove the tube in Case 13, and I have seen it occur in another case, being relieved by the application of leeches.

These conditions, necessitating the prolonged wearing of the tube, are interesting and important, but want of space compels my reference to them to be brief.

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* *Archives of Laryngology*, July, 1881, p. 197.

† *Medico-Chirurgical Transactions*, vol. 48, p. 227.

PERISCOPE.

DISEASES OF THE NERVOUS SYSTEM.

BY C. W. SUCKLING, M.D.
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Periodic Palsy.—(*Medical News*, October 20th, 1894.)—Within the last ten years there have been described a small number of cases of obscure nature characterised by the occurrence of transitory and recurrent palsy. Westphal described, in 1885, the case of a boy aged 12 who, for a period of four or five years, had attacks of paralysis of all four extremeties, occurring at first every four or five weeks, and subsequently several times weekly, and lasting for from 24 to 36 hours. The paralysis was attended with loss of electric irritability of the affected muscles, diminution of reflex irritability, increased thirst, and free perspiration. Sometimes pain was present, and, as a rule, paræsthesiæ were noted. In 1890 Goedflam reported the case of a young man, 17 years old, who for three years suffered from attacks of generalised paralysis, lasting at first for three days, later for two days, and for one day, and recurring at intervals of varying duration. Eleven other members of the maternal branch of the family were said to suffer similarly. Males and females were almost equally attacked. Burr, in 1893, reported the case of a man 30 years of age who for ten years suffered from attacks, in which he was awakened from sleep by a sense of soreness in the muscles of the arms and legs, and, on attempting to move, found he was unable to do so. on account of weakness. Consciousness was undisturbed, sensibility was not deranged, and the function of the sphincters was maintained. The attacks lasted from a day to a week, and recurred about once in four months. Burr relates the case (described by Schachnowitsch) of a man, aged 44, who was subject to attacks of periodic paralysis, which always set in during sleep, and involved the arms and legs without sensory derangement, but with a sense of stiffness, lasting several hours. The patient's father had suffered similarly. Consot has recorded the case of a mother and four of eight children who presented periodic paralysis. There have also been reported a number of cases of periodic palsy of quotidian or tertian or of irregular type, in which the causative factor was believed to be malarial, but quite without adequate evidence. The most recent of this interesting group of cases is reported by Hirsch. The patient was a man aged twenty-six years, who, about once a year for a period of six or seven years, was, without obvious cause or exciting influence, seized with a sense of weariness and fatigue in the extremities, finally progressing to actual paralysis, lasting about twenty-four hours and suddenly disappearing. The reflexes were abolished, but sensibility was unaffected. During the continuance of the condition there was increased thirst. There was also increased cardiac activity and a systolic murmur was heard at the apex of the heart, together with accentuation of the pulmonary second sound. After the seizure the man was as well as before. He was not himself neurotic, but his mother had suffered similarly. In both the facial muscles escaped involvement. Virtually nothing is known as to the nature and etiology of this disorder. The disorder is closely allied to Thomsen's disease and to cases like those described by Martins and Hausemann in which paralysis supervenes on exposure to cold, especially when sudden, as a cold bath. The weakness is progressive and affects the hands, the fingers becoming clawed. Sometimes the muscles of the face and of mastication are affected. The feet may be affected if they are also subjected to cold. All the above-mentioned forms of paralysis present in common a family distribution and hereditary transmission

Nervous and Mental Symptoms of Latent and Intermittent Nephritis without Albuminuria.—By Dr. Bremer, of St. Louis, Mo. (*Medical News*, October, 1894). The author describes cases in which mental symptoms occur in the subjects of chronic nephritis. There may be no albuminuria, but casts are almost always found in the urine, although the specific gravity may be high. The mental condition is characterised by loss of conception of time and space similar to what is observed in alcoholic dementia. In some cases numbness of the hands and fingers, indisposition to work, a sense of pressure in the head, slow pulse, catarrhal conditions of the respiratory or digestive tract, rheumatic pains, neurasthenic symptoms, melancholia, and mania may be the clinical manifestations of nephritis. In one case facial neuralgia of a severe type, and lasting for months, disappeared suddenly on the supervention of a maniacal attack. At one epoch of the disease the neuralgia would alternate with attacks of profuse diarrhœa, the diarrhœa probably carrying off the toxic substances causing the neuralgia. In a number of cases a feeling of tension was experienced in all the muscles; and the author considers that this muscular spasticity is one of the earliest symptoms of uræmia. The prognosis in all these cases is not unfavourable; and the author recommends elaterium for clearing up the sensorium of nephritic patients. The reviewer had a man under his care suffering with uræmic coma. On his recovery from the coma, it was found that he had no memory, no knowledge of time or space, and has not been able to follow any employment for two years. Uræmic aphasia, hemiplegia, and neuritis are well known. It is important to remember that albumen may be absent from the urine, but casts are usually present.

Syringomyelia.—A case of this disease is reported in the *Bristol Medico-Chirurgical Journal*, June, 1894, by Dr. F. H. Edgeworth. He gives the following summary of symptoms:—(1) A condition allied to progressive muscular atrophy in the upper part of the body, as shown by the weakness in the neck and arm muscles and by the wasting of the intrinsic muscles of the hands; (2) spastic paraplegia of the legs; (3) diminution of tactile sensibility and a loss of thermic and algesic sensibility; (4) preservation of muscular sense and of the common sensibility of the muscles and tendons. The case had been slowly progressing for many years, and it was atypical, in that tactile sensibility was affected; but cases of syringomyelia have been described in which tactile sensibility has been absent. There were no trophic lesions, hence the author concludes that it was not a case of Morvan's disease which is apparently syringomyelia plus peripheral neuritis. The typical symptoms of syringomyelia are—(1) progressive muscular atrophy in the upper extremities with a loss of sensibility to heat, cold, and pain. and rarely to touch; and (3) frequently spastic paraplegia of the legs. The symptoms of syringomyelia are due to secondary processes, either to distension of the persistent embryonic canal or to overgrowth with occasionally secondary breaking down of the neuroglia wall.

The Nervous Symptoms of Cirrhosis of the Liver.—In the *Medical News* (Philadelphia) Dec. 8th, 1894, attention is drawn to the nervous symptoms observed in cirrhosis of the liver. Wandering mild delirium with hallucinations and confusion of the identity of persons and places without convulsions or coma may occur for months before death.

The Nervous Symptoms of Patients suffering from Chronic Urethritis.—(The New York *Medical Record*, December 1st, 1894.) Dr. R. K. Macalester states that it is a well-established fact that irritation and disease of the genito-urinary organs are frequently the cause of manifold nervous disturbances. Beard, in his work on neurasthenia, writes:—" Disorders of the genital apparatus are continually exciting disease in remote organs. In men a little prostatitis or urethral or preputial irritation—not only phimosis, but even elongation with secretion of smegma—are constantly the sole and demonstrable origin of hypochondriasis, dyspepsia, and other nervous symptoms." A person, knowing that he has a gleet, by allowing his mind to constantly dwell upon the fact, falls a victim to nervous malady, and the nervous disturbances may progress to such an extent and prominence as to become the predominant feature of the case, and the urethral disease may be overlooked or regarded as one of the imaginary troubles. The author considers that these nervous complications are more common and more severe in America than in Europe. In his experience it is rather exceptional to find a person who, being aware of having a gleet for some length of time, does not betray some marked nervous symptoms; while in Europe this is very common, but by no means the rule. The sufferer complains of weakness, is despondent and irritable. He may suffer from insomnia, vertigo, numbness of the extremities, dyspepsia, and frequently from prickling sensations or numbness along and around the urethra. He worries greatly over loss of semen, which he notices after an erection or defæcation. He may be totally disabled from work, and may remain a neurasthenic for life. With the cure of the gleet, and strictures if present, he may be completely cured. The author recommends the treatment of gleet adopted by Dr. Finger, of Vienna.

The Oral Education of the Deaf.—New York Medical Record, Dec. 8th, 1895.—A review of the methods of educating the deaf is written in this number. Dr. S. M. Miller defends the superiority of the new oral system of educating those congenitally or otherwise afflicted with dumbness. He states that the intermarriage of deaf men and deaf women necessarily thrown together by the manual sign-alphabet system, produces children a large proportion of whom are congenitally deaf; also that orally educated deaf persons can mingle without disability with the world at large while the manually educated cannot. He also points out that all Europe is oral and that America is lagging instead of leading in the education of the deaf and dumb. Eleven years ago Dr. A. Graham Bell showed that one-third of the total number of children of deaf and dumb parents were congenitally deaf. This means that they are also dumb, so far as articulate speech is concerned. He was forced to the conclusion that the method of instructing the deaf then mainly in vogue (by the manual alphabet-sign system) isolated deaf men and deaf women from society in general, facilitated their intermarriage, and was therefore developing a deaf and dumb species of the human race. It is said that in the United States there is one deaf person in every fifteen hundred. The oral method was never introduced into America until 1887. There are practically only two methods in vogue for teaching the deaf—the oral method (teaching by and through articulate speech), and the manual sign-alphabet method. Under both methods the child is taught writing, composition, arithmetic, spelling, geography, and all the English branches. The methods differ distinctly in that the oral system endows its graduate with articulate speech and that the manual-sign system does not.

Localisation of Visual Cerebral Centre.—In the New York *Medical Record*, December 22nd, 1894, Dr. Allen Starr states that the entire tendency of recent investigation upon the visual area of the brain is to prove that the primary cortical visual centres lie about the calcarine fissure in the occipital lobe, that the angular gyrus has nothing whatever to do with vision, and that there is no lesion behind the optic chiasm, either in the thalamus or visual radiation or cortex anywhere which will produce a blindness in one eye alone. All lesions posterior to the chiasm produce homonymous hemianopsia. The entire consensus of opinion is opposed to the view, first advanced by Ferrier and the English school, that blindness in one eye can be produced by a cortical lesion; and the only case with autopsy, cited by Gowers, is unsatisfactory and inconclusive, because of an imperfect clinical examination of the visual field.

The Action of Chloroform on the Functions of the Human Brain and Cord.—(New York *Medical Record*, December 22nd, 1894.) Dr. Bedford Brown, of Alexandria, Va., cited the history of two cases of extensive compound comminuted fracture of the frontal bone and serious injury to the frontal lobes of the brain. The brain could be seen perfectly, and its varying changes of action under chloroform could be observed distinctly. The invariable action of the anæsthetic was to suppress hæmorrhage, to quiet cerebral pulsation, and to positively reduce circulation in the brain, and arterial tension. Any struggling, mental excitement, or resistance while inhaling chloroform caused marked increase in the cerebral circulation and pulsation, with increase of hæmorrhage. When the patient was threatened with collapse from chloroform, stimulants injected in the rectum produced increased circulation and arterial tension in the brain promptly.

REPORTS OF SOCIETIES.

British Medical Association.
Birmingham and Midland Counties Branch.

A special meeting of this Branch was held on Thursday, January 31st, 1895, Mr. H. Langley Browne, President, in the chair. Present, 34 members.

The committee appointed to consider the Draft Bill to amend the Medical Act made the following report.

"The Committee has held three meetings, and submits the following report:—

"The proposed legislation is in the form of a Bill entitled an Act to Amend the Law relating to Unqualified Persons who Practise Medicine and Surgery.

"Three draft Bills have been submitted by the Parliamentary Bills Committee. Of these your Committee has selected the draft approved by Mr. Muir MacKenzie, Mr. Costelloe, and Mr. R. W. Turner, and the following comments and amendments refer only to the text of that copy. (See *Brit. Med. Jour.*, January 12th, 1895.)

"The Bill is intended to strengthen the law as it relates to the improper assumption of medical titles or descriptions, and it inflicts a penalty of fine or imprisonment on those who infringe its provisions. Members of the Branch are asked to notice that this Bill in no way attempts to deal with the abuses of counter prescribing, or with unqualified practice of any kind where no medical title or description is assumed.

"Your Committee recommends that this Branch should express the opinion that no amendment of the law will be satisfactory which does not include effectual provisions for the suppression of such unqualified practice.

"Subjoined is an analysis of the clauses of the Bill, with the comments and amendments of your Committee.

"Clause 1. Section A prohibits the use of certain titles, 'or any of these or the like titles with any added words or designations;' while Section B, continuing, says, 'or any title, addition, or description,' etc., 'implying the possession of a medical qualification, or the skill necessary for the practice of medicine or surgery, or midwifery, or any branch of medicine or surgery.' The section also declares the penalties (£20 fine, or imprisonment), but restricts imprisonment to those persons convicted on indictment of inflicting grievous bodily harm.

"Your Committee approves of this clause, but would prefer to see a shorter list of titles and descriptions, with less pretension to comprehensiveness, if such a notorious example as 'bone-setter' is to be deliberately omitted. In Section B the word 'name' should be inserted on the first line after the word 'title,' so as to bring it into harmony with the words quoted in Clause 3.

"Clause 2 defines the persons who shall be considered as not duly qualified—viz., those who are not registered, or who do not possess a registrable qualification. This is approved; but Section C appears to your Committee to need the addition of the words 'in the United Kingdom' after the word 'registration,' while the remainder of the sentence should be left out.

"Clause 3 defines the words 'title, name, style, addition, or description,' and declares what is meant by the assumption of them. This clause appears to your Committee to be quite satisfactory.

"Clause 4 permits prosecutions to be undertaken by the General Medical Council, by its Branch Councils, or by any of the medical corporations (defined as those mentioned in the Medical Act of 1886), or by any private person. Your Committee is of opinion that it would be wiser to make the consent of one of the aforesaid bodies necessary before any private person could institute a prosecution under the Act.

"Clause 5 determines the evidence necessary to the proof of non-qualification, making the Medical Register, or an affidavit of the Registrar of the General Medical Council, or of an official of one of the medical corporations sufficient proof either way.

"Clause 6 exempts from these penalties certain persons—for example, strangers merely visiting in this country, or persons who do not intend to practise. Your Committee fears that this would exempt such itinerant medical lecturers as Mrs. Longshore Potts, and recommends that only those shall be exempted who do not practise or intend to practise in the United Kingdom.

"Clauses 7 and 8, being only saving and titular clauses, need no comment.

"(Signed)

"H. LANGLEY BROWNE, Chairman.

"January 21st, 1895."

It was proposed by the President and seconded by Dr. Saundby that the report be adopted.

After some discussion this was carried *nem. con.*

The committee appointed to consider the various schemes proposed in connection with the Registration of Midwives made the following report:—

"1. That the fact of a large proportion of labours attended as at present by ignorant and untrained women constitutes a danger to the lives and health of parturient women and their infants.

"2. That it is expedient that a body of women, to be called

Midwifery Nurses, should be so trained as to be able to render efficient attendance on cases of natural labour, and to give first aid in accidents arising in the course of labour.

"3. That the Midwifery Nurses should undergo a process of training extending over twelve months, and at the end of that period should be examined, and, if then found efficient, their names should be placed on a register.

"4. That the education, examination, and registration of Midwifery Nurses should be under the direct supervision of the County Councils, subject to the control of the Local Government Board, or some other central authority.

"5. Any persons now practising as midwives should be allowed two years in which to comply with the new regulations as to examination and registration.

"6. That the attendance of Midwifery Nurses should be strictly limited to cases of natural labour, and that their duties and the penalties for disregarding or exceeding those duties should be defined by the local and central bodies above mentioned.

"H. Langley Browne.

"January 14th, 1895,"

It was proposed by the President and seconded by Mr. M. A. Messiter, "That the Report be adopted."

Sir Walter Foster moved the following amendment:—

> "To delete all the Report of Paragraph 1 and to substitute the following words:—'That in as much as the proper care of these lives before, during, and after the act of labour involves a knowledge of almost the whole arts of Medicine and Surgery, no one should be entrusted with them save fully trained and qualified practitioners.'"

This was seconded by Mr. Lawson Tait.

After considerable discussion the amendment was put to the meeting and was lost.

The original motion was then put and was also lost.

PATHOLOGICAL AND CLINICAL SECTION.

The third meeting was held in the Medical Institute on Friday, January 25th, at 8 p.m., Dr. MALINS in the chair.

A case of Alcoholic Pseudo-tabes.—Dr. Kauffmann showed a man aged 40, in fair general health, but having the appearance of a beer-drinker, and owning to a history of long-continued excessive drink. He presents much ataxia of the legs, a little of the hands, walks with feet wide apart, and has Romberg's symptom markedly developed. There is and has been no pain or tenderness of any kind. The sensation in the feet is imperfect, the floor feeling to him "like a lot of shavings," and touch impressions are slowly and inaccurately realised. The same applies to the hands, where dysæthesia and numbness are limited to the fingers up to the first interphalangeal joint, and are most marked at the finger tips. Palmar and dorsal surfaces are equally affected, as are the plantar and dorsal surfaces of the feet. There is, withal, comparatively little loss of muscular power, though some wasting is perceptible in the calves, and the peronei and tibiales are weak. The first dorsal inteross muscle of the right hand is a little wasted, and all are weak. There is and has been no interference with the functions of the bladder or rectum. The pupils are normal. The history obtained is that the patient was admitted to hospital with pneumonia in November last. Before this there was no paralysis or weakness. On recovery, he felt feeble and weak in the legs and never recovered. From that time to his present admission into hospital—three weeks ago—he went on drinking, and living poorly. Great and rapid improvement has occurred in the general condition and in the signs of local disease.

Hydatid of Brain.—Dr. Douglas Stanley exhibited a brain showing a large hydatid cyst. The patient was a boy, aged 12, who showed some paralysis of the left ocular muscles, the left fifth and seventh nerves, and feebleness of grasp on the left side, and some left foot-drop. The superficial reflexes were very active, the knee-jerk was lost on the right side, increased on the left. There was also left ankle clonus. *Post mortem* there was a well-marked hydatid cyst, about the size of a large hen's egg, in the right cerebral hemisphere. It was single, and no other cyst was found in any other organ.

Abscess of Cerebellum.—Dr. Douglas Stanley also showed an abscess formed in the left cerebellar lobe of a man aged 31. The patient gave a history of pain with redness and swelling behind the left ear fourteen years previously, for which he was leeched. There had never been any discharge from the left ear, but he was deaf on that side. He had headache, some vomiting, double optic neuritis, some left internal strabismus, variable in amount, and some slight swaying to the left side in walking. The symptoms had come on recently. He died somewhat suddenly with respiratory failure.

Mr. L. P. Gamgee also showed a specimen of acute abscess of the cerebellum from a patient aged 11. There was a history of a discharge from the left ear for eight years, and a swelling had been forming over that mastoid process for fourteen days. The patient was taken suddenly ill with vomiting the day before admission.

On admission the temperature was 101°, pulse 100, respiration 20. There was great retraction of the head, some pus in the left ear. No swelling over the internal jugular vein, no paralysis, but the patient was semi-comatose, and there was double optic neuritis. The mastoid antrum was opened and found full of pus and granulation tissue, and the tempero-sphenoidal lobe was explored, but no pus found Death occurred twenty minutes after the operation, and at the *post mortem* an acute abscess of the cerebellum was found.

Fibroma of Ovary.—Kidney from a Case of Nephrectomy.—Mr. John W. Taylor showed (1) a specimen of small fibroma of the left ovary successfully removed from a single woman aged 32. The patient had complained of ovarian trouble for six years, and of severe pain in the left side for nine months.

The pain was *not* dysmenorrhœal. The tumour is clearly defined, and its outer wall is rather intimately adherent to the true ovarian tissue. The latter is attenuated and spread out over the surface of the growth. (2) A kidney of the right side, removed by abdominal nephrectomy for enormous saccular dilatation of the ureter. A large cyst (containing some gallons of straw-coloured fluid, and into which the ureter opened) was found behind the peritoneum. An attempt to enucleate the cyst was only partially successful on account of its intimate attachment to the duodenum. The kidney was removed, and the unenucleable portions of the cyst were drained. The patient made a slow but good recovery.

Improved Tracheotomy Tube—Mr. William Thomas exhibited an improved tracheotomy tube. He had frequently been impressed with the fact that in such instruments there was not sufficient provision made for easy removal and replacement, and especially for perfect cleansing of the inner tube, and some twenty years ago he had inner tubes constructed of two halves hinged together and regulated by a screw. The instrument he exhibited was similar, with some minor improvements suggested by experience. He had found it very successful, easier to pass and withdraw than any other, and offering perfect facilities for cleansing.

Femur from a case of Scurvy Rickets.—Mr. George Heaton showed a femur from a case of Scurvy Rickets. The shaft of the bone was completely separated from the lower epiphysis, and lay loose in a cavity filled with fluid blood and blood clot surrounded by the separated periosteum. The bone itself was small and deeply blood-stained throughout. The epiphysis was healthy. The parts were removed from a patient aged 18 months who showed well-marked evidences of the disease. There were swellings around both shoulder joints and of both thighs. The upper epiphysis of each humerus was separated from the shaft. The ends of the other long bones were enlarged and showed rickety changes. There were in addition several small subpleural hæmorrhages. The child had since the age of eight months been reared almost exclusively on a proprietary infants' food.

Ureteral Calculus.—Mr. Christopher Martin showed a calculus which had been impacted in the right ureter. The patient was a young married woman with a tubercular history and numerous tubercular glands. She came complaining of constant severe pain in the right side of the pelvis of some weeks' duration. She had night sweats, loss of flesh, and fever. The pain was worse at the menstrual period, and quite incapacitated her. She had pain in the back, and bearing down. There were no urinary symptoms—no pus, blood, or albumen in the urine, no vesical irritation, no pain in or enlargement of either kidney. Bi-manually there was found, to the right side of the uterus, a tense oval swelling as large as an orange, very tender, and with obscure fluctuation. It was fixed to the lateral pelvic wall. It was diagnosed as a tubal or ovarian abscess. Suddenly, however, the pain was relieved, and the patient soon afterwards passed, *per urethram*, two cylindrical calculi, each about two-thirds of an inch long and one-third of an inch thick. The urine became loaded with pus. On examination, the pelvic swelling had disappeared. At the same time, all the patient's symptoms were relieved. Evidently the calculi had been impacted in that portion of the right ureter which pierces the base of the broad ligament to the side of the uterus. An abscess of the ureter had formed, and finally had discharged with the calculi into the bladder.

Peritoneal Cyst.—Mr. J. T. J. Morrison showed a specimen of a peritoneal cyst he had removed from the inguinal canal.

MIDLAND MEDICAL SOCIETY.

Meeting held on Wednesday evening, December 5th, 1894, the President, Mr. T. F. CHAVASSE, F.R.C.S. Ed., in the chair.

Cystic Kidney.—Mr. Edge showed a large cystic kidney which he had removed from a woman by abdominal nephrectomy. The patient made a good recovery.

Locomotor Ataxia.—Dr. Kauffmann showed a woman, aged 38, with marked symptoms and signs of locomotor ataxia together with wide-spread painful skin-sensations implicating the back of the trunk up to the fourth dorsal vertebra. These painful disturbances, which Dr. Kauffmann looked upon as being due to functional disturbance of the nerve-cells of the posterior horns of grey matter, had existed for sixteen years, dating from a wrench of the back sustained at that time. The definite signs of posterior sclerosis, viz., lightning pains, girdle-sensation, Ronberg's sign, and absence of knee-jerks commencing only six years ago.

The dorsal pain had almost ceased to trouble the patient and the fulminal pains in the legs had become much less severe under treatment. There was no discoverable trace of syphilis, and no cause for the disease other than the old injury could be found.

Pathologically the case suggested the consideration that the old injury had interfered with the nutrition of the posterior portions of the spinal cord, and that in the postero-external white columns of the lumbar region this altered function had led on to actual sclerosis.

Porro's Operation.—Mr. Christopher Martin showed a patient on whom eight weeks previously he had performed Porro's operation for impeded labour due to contraction of the pelvis. Patient was aged 29 years, was married, pregnant at the full term, and had been in strong labour for two days. She was 4 ft. 6 in. in height. The pelvis was very small, the true conjugate diameter being only 2¼ inches. Mr. Martin decided on

Porro's operation which he performed without delay. The patient made a speedy recovery, being up on the 24th day and out of doors on the 30th. The child was born dead.

This was the sixth case in which Mr. Martin had amputated the pregnant uterus—twice on account of contracted pelvis, twice for cancer, once for myoma, and once for rupture of the uterus.

Paper.—Dr. Foxwell then read a paper on the advisability of combining into one disease various catarrhal affections which at present received the names of the portions of the body attacked. The name he suggested for this disease was Catarrhus. The reasons he gave for this unification were:—1. These affections were evidently constitutional in nature. 2. In all of these the general character of the disease was the same, though naturally modified in local detail according to the part chiefly affected. 3. One of these affections never, or with extreme rarity, occurred alone; most commonly three or more arose together. 4. They all occurred under similar climatic and meteorological conditions. 5. They were mutually contagious—that is, any one of them did not necessarily reproduce itself in a fresh subject, but, with equal frequency, reproduced some other of the series. 6. If contagious, they must be due to a germ. Pneumonococcus had been found in them all, and cultivations of this germ had set up conditions closely resembling some of them—*e.g.*, acute pneumonia and enteritis. Still the position of pneumonococcus was not established, and it might well be that the causative germ was yet to be found. 7. Some individuals inherited a tendency to fall victims to this disease, as they did to tubercle, though predisposition was here far less important than in tubercle.

In conclusion, Dr. Foxwell gave a description of the disease as he saw it, enumerating the various affections which he included under it.

The fourth ordinary meeting of this Society was held on Wednesday, January 16th, 1895, the President, Mr. T. F. CHAVASSE, in the chair.

Pityriasis Rosea.—Dr. Leslie Phillips showed a case of pityriasis rosea, noteworthy as presenting some unusual aspects. When first seen, nine months previously, the circinate patches, involving the trunk, thighs, and arms, had faded characteristically, but had left irregular-shaped patches of the eruption symmetrically placed at the sides of the neck, anterior and posterior folds of the axillæ, and over the prominences of the hips. This efflorescence was indolent, rose-brown in colour, dry, finely desquamative, and slightly raised above the surface of the skin, especially at the margins of the patches. Twice during the time the man had been under observation catarrhal jaundice had occurred.

Dr. Purslow showed a fœtus from a case in which decapitation had been necessary to complete delivery. The case was one of impacted shoulder presentation The midwife, on her attempts at delivery, had torn the arms completely away at the shoulder joint. All attempts at version proving ineffectual owing to the contracted state of the uterus, Dr. Purslow performed decapitation. Delivery was then easily effected.

Post Partum Hæmorrhage.—Dr. Malins opened a discussion on the treatment of post partum hæmorrhage. He alluded to the importance of the subject to the majority of the Society who were engaged in the practice of midwifery, and pointed out the value of trustworthy and accurate knowledge in times of emergency. The natural manner in which hæmorrhage is arrested after delivery was pointed out. Considerable stress was laid upon the prophylactic treatment and the treatment of those called "flooders." The order in which the treatment was enjoined after delivery of the placenta was—1. Manual stimulation, external and internal; bimanual compression also of the uterus in a position of anteflexion was noticed. 2. The application of cold and heat. 3. The use of ergot by mouth and hypodermically. 4. The application of astringents, such as iron, by injection, swabbing, and tampon, and the use of vinegar. 5. Duhrssen's method of plugging the uterus. 6. Transfusion. The details of the above methods were considered, and the relative importance and advantage of each pointed out from the speaker's experience.

Mr. Alfred Freer said that the hæmorrhage in some cases began before delivery was complete. The most dangerous cases were those in which the hæmorrhage took place between the birth of the child and the expulsion of the fœtus; and in such cases separation and removal of the placenta was of the utmost importance. Women who indulged in beer excessively were often "flooders," and a purgative course of treatment before labour served as an admirable prophylactic. Vinegar and water had in his hands been of great service in some cases, and he preferred it to iron, which if used should be in very dilute solution. Neutral iron alone was to be preferred to the perchloride.

Mr. A. H. Evans said that post partum hæmorrhage was very rare in well-conducted labours. The worst cases were those in which in the absence of a medical man there had been only an imperfect delivery of the placenta. The passage of the hand into the uterus and a thorough cleaning away of all coagula was a very important item in the treatment. He called attention to distension of the urinary bladder as an occasional cause of difficulty in contraction of the uterus, and alluded to the importance of a quick pulse after delivery as a warning of impending hæmorrhage.

Dr. Purslcw found that the most troublesome cases of post partum hæmorrhage occurred in primiparæ after the application of forceps under chloroform for protracted labour, He insisted upon the importance of never losing the manual control of the uterus after delivery, and always gave as a ventum treatment a dose of ergot after delivery.

Dr. Donovan said that the treatment of post partum hæmorrhage really began before delivery. The child should always be made to advance by forceps if the uterus when contracting forcibly is not capable of advancing it. Exhaustion and uterine inertia are thus avoided. When the head is delivered, the advance of the body may be retarded, and the uterus thus given time to contract. Ergot should be given as a ventum treatment after the birth of the child.

Dr. E. Underhill laid stress on the importance of anticipating, if possible, the occurrence of hæmorrhage by a careful enquiry into the history of previous confinements. The uterus should be grasped with the hand immediately the child is born. He urged the importance of supporting the strength of the patient and the administration of easily assimilated food in cases of weakness.

REVIEWS.

THE HYGIENIC PREVENTION OF CONSUMPTION.*

This is a good and common-sense *résumé* of the prevalent opinions on this subject. It is written in a semi-popular style and should therefore prove valuable to Parents, Teachers, County Councillors, and others to whom the national hygiene is a care. On the other hand, to the medical mind this manner is somewhat depressing, often consisting in the stringing together of Tupperian platitudes. It further gives rise occasionally to an ex cathedrâ dogmatism which is unintentionally amusing: *e.g.*, "It has been stated that phthisis is very uncommonly found in conjunction with valvular disease of the heart. If it is intended to imply that persons suffering from heart disease are not liable to consumption, my experience would be against this contention, for I frequently see the two conditions present in the same patient. *There is nothing in*

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* The Hygienic Prevention of Consumption. By J. E. Squire, M.D., M.R.C.P., D.P.H. London: C. Griffin and Co. Limited.

heart disease protective against phthisis." The solemn finality of the conclusion, which we have italicised, is so ludicrously unwarranted by the petty premiss of his personal experience.

The work consists of three parts:—A short account of the nature of consumption—Various measures to be undertaken to prevent the inset of consumption in the individual, and to hasten its diminution in the State—and thirdly, The hygienic management of the early stages of the disease. It is naturally on the second and third of these that the essential value of the work is based. To all of us it is sure to prove useful; for if it tells us nothing we did not know before, yet it will remind us with considerable completeness of the various details in the management of our cases and prevent the omission of any of these; moreover, to most of us many of its statements will be new.

A MANUAL OF HUMAN PHYSIOLOGY.*

Prof. Raymond states in his preface, that after twenty years' experience as a teacher of physiology he has come to the conclusion that only the main facts and principles of this branch of medical study can be, and indeed need be, assimilated by the student. In this we feel inclined to concur. A great deal of what is taught as physiology is perfectly useless to the student after he has passed his examinations, in other words, when he begins to think for himself. For this reason we welcome a short text-book on physiology such as the one that Prof. Raymond has written. It is really fuller than the tone of the preface would lead one to expect, and contains quite as much as is necessary for the generality of medical students. In addition to plenty of illustrations in the text there are four excellent coloured plates.

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* A Manual of Human Physiology, Prepared with Special Reference to Students of Medicine. By Joseph H. Raymond, A.M., M.D. Philadelphia; W. B. Saunders.

New Books, etc., Received.

The Geographical Distribution of Tropical Diseases in Africa. By R. W. FELKIN, M.D., F.R.S.E., Lecturer on Tropical Diseases and Climatology, School of Medicine, Edinburgh. Edinburgh: William F. Clay. 1895.

Diphtheria and its Successful Treatment. By BROWNLOW R. MARTIN, A.B., M.B., Dub. Second Edition. London: Baillière, Tindall and Cox. 1895.

Atlas of Illustrations of Pathology, compiled for the New Sydenham Society. Fascic ix.; Diseases of the Testis, Part I. London: The New Sydenham Society. 1894.

Year-Book of Treatment for 1895. Cassell and Co., London, Paris, and Melbourne.

Three Cases of Acute Pyelitis in Infancy. By EMMETT HOLT, M.D. Reprinted from *Archives of Pediatrics*, November 1894.

The Nomenclature of Diseases of the Gastro-enteric Tract. Report of the Committee of the American Pediatric Society. Reprinted from *Archives of Pediatrics*, August 1894.

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THE
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APRIL, 1895.

ORIGINAL COMMUNICATIONS.

ON THE LOCALISATION OF GALLSTONES, AND THE SEVERAL OPERATIONS FOR THEIR REMOVAL FROM THE BILIARY PASSAGES.

BY JORDAN LLOYD, M.S., F.R.C.S.
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LECTURER ON OPERATIVE SURGERY IN THE MASON COLLEGE,
BIRMINGHAM.

ONE of the most important additions to professional knowledge, since the time when abdominal diseases came more often into the hands of the operating surgeon, is seen in our present views on the diagnosis and treatment of cholelithiasis. The teaching of my own student days—less than twenty years ago—has been entirely changed, and gallstones are recognised now where they would formerly have been absolutely unsuspected. The object of this paper is not so much to call attention to the general phenomena of gallstone disease, but rather to take another step forward and say where exactly does the calculus, or calculi, lie. Whether in the gall-bladder, the cystic, hepatic, or common bile ducts; and which is the operation best adapted to these varying conditions.

The *general* diagnosis of "gallstones" is insufficient to indicate the treatment appropriate to any case; just as would be that of "urinary calculus" without specifying whether the calculus was in the kidney, the ureter, the bladder, or the urethra. We cannot at present diagnose with the same certainty the bile, as the urine stone—chiefly for the reason that we have no subjective method of "sounding" for the former, such as we may employ in the latter, but a careful investigation of clinical phenomena will, in the majority of cases, enable us to say with tolerable accuracy, not only that gallstones are present, but also in which anatomical region they are probably lying.

Of the causes of cholelithiasis we know but little. These calculi commonly originate within the gall-bladder, small masses of mucus being frequently their starting-point. Occasionally, however, small concretions are found primarily in the bile ducts. Gallstones are chiefly of two varieties—those consisting mainly of bile pigments and bile salts, and those of cholestearine. The former vary in colour from yellow to black, are opaque, soft, and usually multiple; the latter are more or less transparent, hard, and usually single. They are more common in females than males, and chiefly occur in child-bearing women at the later periods of life. They are predisposed to by tight lacing, and have been met with in women under 20. When calculi are small, they may be got rid of by passing down the gall ducts into the duodenum; or when large, may find their way by ulceration through the abdominal parietes, or into any one of the neighbouring viscera. When gallstones do not escape, the consequences may be serious and many: mechanical, inflammatory, or degenerative; for although medicinal and other remedies may palliate and may relieve some of their symptoms, they do not cure the malady. There are no reliable therapeutic means by which they may be dissolved or otherwise got rid of, just as there are no reliable internal solvents for calculi in the urinary tract.

Gallstones often lie harmless in the gall-bladder for years; but, as a rule, their presence sooner or later irritates the tender lining of this cavity, and a cholecystitis is set going. This inflammation is sometimes very acute, giving rise to suppuration or empyema of the gall-bladder; more often, however, it is catarrhal or sub-acute, and the cavity may become slowly distended by its own mucous secretion. Cholecystitis due to gallstone, once started, becomes, as a rule, chronic, and leads to thickening, contraction, and entire loss of distensibility of the walls of this cavity, just as is the case in chronic cystitis of the urinary bladder. The gall-bladder becomes puckered and reduced to a mere thick-walled sinus, which is quite incapable of distension even under continued pressure. This practical obliteration of the gall-bladder is important always to bear in mind, as it explains the absence of a tumour from many gallstone cases, and constitutes, in addition, a serious difficulty when operation has to be undertaken. Inflammation easily spreads from the gall-bladder to the ducts, and puckers and thickens them in the same way; but when the common bile duct contains calculi which obstruct it near its entrance into the duodenum, it may become distended to the size of the small intestine. Inflammation very frequently spreads from the biliary apparatus to the peritoneum and causes adhesions with adjacent structures, such as the transverse colon, omentum, abdominal parietes, duodenum, stomach, or right kidney Collections of pus may form in any part of the biliary passages, and may extravasate into the greater or the lesser sac of the peritoneum, the stomach and intestines, liver or kidney, or externally through the abdominal wall. It has been asserted, and with very good reason, that cancer of the liver is not infrequently a secondary consequence of cholelithiasis. Gallstones may prove fatal from the following causes :—Exhaustion, cholæmia, collapse during an attack of colic, peritonitis, pylephlelitis, hepatic abscess, intestinal obstruction, and cancer.

Before discussing the symptoms of cholelithiasis, may I remind you of the well-known facts, that "gallstones" are frequently found *post mortem* in elderly subjects where they have never been suspected during life, although the patients may have been under careful medical observation; and also that large biliary concretions have been passed per rectum without previous symptoms having existed, even although the calculi must have found their way into the intestine by ulceration. Schroeder found gallstones in a series of autopsies at the Strasbourg Hospital to the number of 4·4 per cent. in men and 20·6 per cent. in women. Gallstones do not necessarily therefore give rise to symptoms of any kind. Their presence is only manifest when they become "engaged" in one or other of the different biliary passages, or when they set up irritation or inflammation in the structures enclosing them.

I believe that cholelithiasis is one of the most frequently overlooked disorders, and that scores of its victims go through life and often succumb to their maladies with their disease unrecognised. Gallstone attacks are often mistaken for biliousness, wind, cramp, spasms, congestion of the liver, indigestion, cardialgia, lead colic, renal colic, fæcal impaction, pleurodynia, neuralgia, and when more severe, for pleurisy, perihepatitis, peritonitis, appendicitis, intermittent fever, and intestinal obstruction. Recurrent attacks of pain in the belly should suggest to us concrete disorder, and should not be lightly passed over by the use of meaningless terms, like many of those just indicated.

The general symptoms of gallstones are characterised by paroxysmal irregular *pains* in the abdomen, starting either in the right hypochondriac or epigastric regions, radiating upwards to the shoulder tip or back to the scapula region, often accompanied by *nausea* and *vomiting*, and sometimes even by collapse. Fullness is often complained of, with anorexia, depression of spirits, and flesh loss.

We now no longer regard *jaundice* as an essential symptom (indeed in the large majority of cases it is conspicuously absent); but when present, much is to be learned from its careful observation. The finding of gallstones in the excreta is positive evidence enough, but their absence teaches us nothing; and similarly, too, with regard to the formation of a *tumour* in the right hypochondrium, its presence gives information of the greatest value, but its absence is of no real clinical significance. *Pyrexia* is met with when inflammatory processes are present, and, when of the intermittent type, is a phenomenon of the greatest consequence in localising the seat of the concretion. *Local tenderness* is a sign of high value, and too much attention cannot be given to its characteristics. *Stabbing pain*, elicited by sharp, deep, heavy percussion over the right hypochondrium, is suggestive of calculus. Many other symptoms might be referred to, but I shall confine my remarks to-night more particularly to the few special phenomena of pain, jaundice, pyrexia, and local swelling, because it is by a careful consideration of these that our localisation is arrived at.

When the general diagnosis of cholelithiasis has been made, it is necessary, before considering the question of localisation, to remember that gallstones may be met with under six different conditions. These conditions may be divided into two groups: first, those in which the walls of the gall-bladder are yielding, and allow of its distension, as seen in Fig. 1; and secondly, when the walls are contracted, indurated, and indistensible, as seen in Fig. 5. A reference to the diagrams will make these several conditions clear.

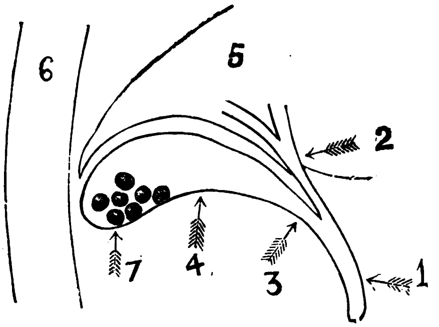

Fig. 1.—Multiple gallstones in a healthy gall-bladder.

The figures in all the diagrams indicate as follows:—1, Common bile duct; 2, Hepatic duct; 3, Cystic duct; 4, Gall-bladder; 5, Liver; 6, Abdominal wall; 7, Gallstones.

In the first group are placed—No. 1, in which the stone lies in the gall-bladder; No. 2, in the cystic duct; and No. 3, in the common bile duct. In the second group, in No. 4 the stone lies in the shrunken gall-bladder or cystic duct; in No. 5, in the common bile duct, which, with the hepatic duct, is thickened and dilated, whilst the gall-bladder and its duct are shrunken and indurated; and in No. 6 the shrunken gall-bladder is packed with stones, and a calculus also is present in the common duct.

The condition indicated by No. 1 gives rise only to attacks of colic. There is usually no tumour, no jaundice, no pyrexia. If, however, a gallstone passes along the bile ducts into the duodenum, a slight attack of jaundice may follow next day, and the gall-bladder may become moderately distended.

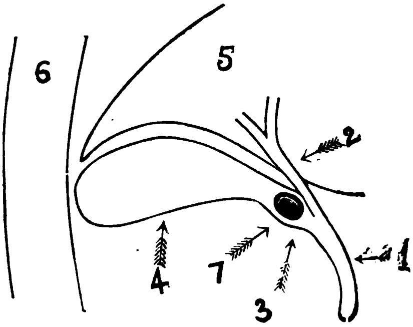

Fig. 2.—Calculus in the Cystic duct.

No. 2 is characterised by colic and the presence of a tumour formed by the distended gall-bladder. There is no jaundice.

No. 3, by the co-existence of colic, tumour, jaundice, and sometimes pyrexia.

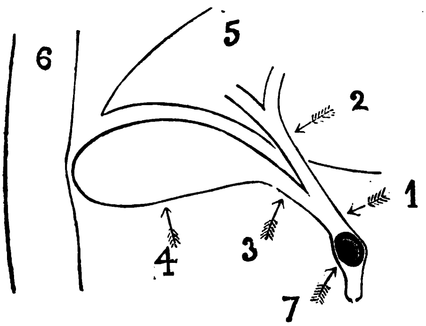

Fig. 3.—Calculus in the Common Bile duct.

It is well to remember that chronic jaundice, accompanied by a distended gall-bladder, is most commonly due to malignant disease of the liver or pancreas, and is not accompanied by the pyrexial phenomena, of which I shall speak more in detail when I come to the consideration of the more common condition as figured in 5 and 6.

No. 4 is the most difficult of all to diagnose. It may be suspected where paroxysms of pain are frequently recurring, and where pyrexia and local tenderness are present. There is no tumour and no jaundice.

No. 5 is, to my mind, the most interesting and, in some ways, the most important of the whole group; and its diagnostic recognition we owe entirely to the observations of Dr. Osler, of Baltimore. Since reading Osler's paper, in 1890, I have been enabled accurately to diagnose three cases of "chronic obstruction of the common bile duct by gallstones," and have in each case confirmed the diagnosis by operation. Osler's symptoms are three in number, and there can be no mistaking them. 1. Paroxysmal hepatic colic. 2. Well-marked ague-like attacks, characterised by chill, sweating, and fever. 3. Chronic jaundice of varying intensity, deepening after each paroxysm, and fading during the intervals.

No. 6 has symptoms similar to No. 5, and can only be recognised at the time of operation.

Before leaving the subject of symptoms I should like finally to add that as a rule the pains of hepatic colic shoot upwards and backwards, whereas those of renal colic shoot downwards and forwards; that the characters of a distended gall bladder are a round-ended swelling which appears under the tip of the ninth right costal cartilage and enlarges along a line running obliquely downwards and inwards immediately below the umbilicus. The tumour is "anchored" above beneath the ribs and cannot be depressed much by manipulation although it descends freely on deep inspiration; distension of the colon pushes it upwards and forwards. Tumours of the right kidney, on the other hand, begin in the loin and enlarge horizontally forwards and inwards; they are "anchored" towards the middle line, and can be moved vertically through a greater distance by manipulation than by respiration, and they are hidden and pushed out of sight by distension of the colon; and lastly, that chronic jaundice without distension of the gall bladder is more likely to be due to gallstones than to malignant growths.

I now propose to consider briefly the several operations applicable to each of these several conditions, and to state from my own experience the practical conclusions I have arrived at.

The operations applicable to No. 1, when a stone lies free in the gall-bladder, are cholecystostomy, cholecystotomy, cholecystectomy, and cholecystenterostomy; of these cholecystostomy is, I think, the proper procedure, and it is one of the most simple and satisfactory of surgical operations. The abdomen is opened by a two or three-inch vertical incision from the costal margin at the outer edge of the rectus muscle, or when a tumour is to be felt, the incision may be made immediately over it. The gall-bladder is exposed, pulled up into the wound, and emptied of its liquid contents by trocar and canula; the puncture opening is enlarged, the edges of the bladder wound held with forceps, and the stone or stones removed with a scoop. The open gall-bladder is then sewn to the fascia covering the rectus, or to the muscle itself with a continuous silk suture, a drainage tube inserted, and the skin wound brought together with two or three interrupted stitches. This operation is usually spoken of as cholecystotomy, and is that most commonly performed, but strictly speaking, cholecyst*os*tomy is its proper title. Cholecystotomy rather should imply the opening of the gall-bladder, and its return into the abdominal cavity with its incision sutured or not according to circumstances. It is performed in a similar manner to cholecystostomy, but its death-rate is higher, and it has no real advantages of any kind. Cholecystectomy—excision of the gall-bladder—has been advocated as a preventive of subsequent gallstone formation, and is not difficult to perform: the calculi are removed as above described, the gall-bladder is separated from its attachment to the liver as far as the cystic duct, tightly encircled with a silk ligature at its neck, and cut away, or before ligaturing, its peritoneal and muscular coats may be divided transversely at the neck, the mucous membrane only enclosed in the ligature, and the muscular and peritoneal layers sewn over the stump with a continuous Lembert suture. I look upon cholecystectomy as an unnecessary procedure, and its higher mortality should certainly exclude it in the condition we are now considering. Cholecystenterostomy has recently been advocated in this class of case by Murphy, of Chicago, who has invented an ingenious anastomosis button which makes the operation easy and rapid. He justifies his proposal chiefly on the ground that cholecystostomy is liable to result in permanent biliary fistula—a statement entirely opposed to the experience of Tait, Robson, Ferrier, and myself. To anastomose a gall-bladder, emptied of its calculi and whose ducts are clear, with a duodenum is, in my opinion, an unwarrantably dangerous and unnecessary measure, although it may be so easily and quickly done with a Murphy button.

When a stone is impacted in the cystic duct, as seen in No. 2, and the gall-bladder distended in consequence, the incision should be made over the situation of the tumour. The same operations are feasible here as in No. 1; but, in addition, cholelithotrity or choledochotomy may be called for. Of all these operations cholecystostomy is that which should first be tried, and should be supplemented by another procedure only when it has failed. When the abdomen is opened, a stone in the cystic duct may be felt by slipping the finger beneath the liver along the outer surface of the gall-bladder, and may be most easily squeezed back into the gall-bladder before that cavity is opened. If this cannot be accomplished, the gall-bladder is incised and emptied of its contents, as already described, and an attempt made to lift the impacted calculus out of its nest with a scoop or forceps working from inside the cavity, aided by fingers working from without. The stone may have to be broken up before it can be dislodged, and this may be done by splitting it with a round sharp-pointed needle, or by crushing it with suitable forceps from within the gall-bladder. If these measures fail, the needle may be pushed into the stone through the walls of the duct, or the offending calculus may be crushed by means of rubber-padded forceps applied outside the ducts. Any of these procedures are spoken of as cholelithotrity; and should all of them fail, we may leave the stone where it is, complete our cholecystostomy in the usual manner, and take steps to remove the obstruction by daily injections of watery or oily solutions, or we may perform cholecystenterostomy instead; this latter operation is certainly more justifiable here than in the first condition described. There is no necessity, however, to leave an impacted stone behind, for choledochotomy—incision through the duct walls—is a practicable and tolerably safe procedure. The cystic duct should be incised in its length over the calculus and towards its right side, and the stone removed with a scoop. The opening in the duct may sometimes be closed with a continuous Lembert suture; but owing to its depth from the surface of the body, the limited space in which to work, and the encroachment of the surrounding structures, this can rarely be satisfactorily accomplished. Fortunately, however, this is a matter of little consequence; but if we cannot suture accurately, we must insert a glass drainage-tube down to the opening in the duct, pack it lightly beneath with iodoform gauze, which is brought out at the lower angle of the external wound, and removed in thirty-six or forty-eight hours. I have dealt with three cases in this manner with most satisfactory results.

The condition figured under No. 3 is less common than those already dealt with, and its operative treatment is practically identical with that of No. 2; I would add, however, that cholecystostomy is less likely to succeed here because of the distance of the calculus from the outlet of the gall bladder, and that cholelithotrity and choledochotomy are more difficult because of the depth of the space in which our manipulations have to be carried on. The former of these two latter operations should always be performed if at all possible.

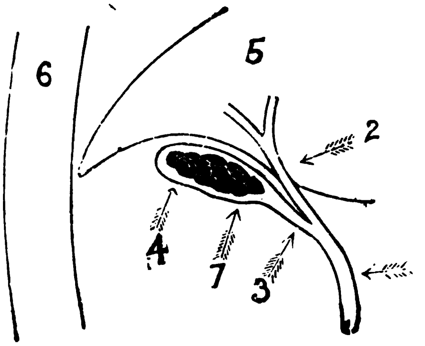

Fig. 4.—Multiple Calculi in a contracted and thickened Gall-bladder.

The treatment of No. 4 introduces us to a condition in which the gall-bladder is so contracted that it cannot be sutured up to the abdominal parietes, the operation of cholecystostomy is therefore impracticable: cholecystotomy with suture of the opening, although possible, is usually both difficult and dangerous. Cholecystectomy might be available, and in certain circumstances should be tried. Cholelithotrity, except as supplementary to other operations, need not be considered. Cholecystenterostomy is impracticable by mechanical apparatus such as Senn's bone plates and Murphy's buttons, because of want of space in the gall-bladder, and to anastamose with simple sutures in this condition is absolutely impracticable. It is by choledochotomy, therefore, or cholecystotomy without suture, that we can most efficiently and safely deal with this class of case. It is upon free and perfect peritoneal drainage by means of glass tubes and iodoform tampons that we have to rely, and the details of the treatment have already been described when dealing with No. 2. In connection with this and the remaining two varieties it may be desirable also to drain the right lumbar peritoneal pouch by means of a tube through the abdominal wall in the lumbar region just below the lower end of the right kidney. I have adopted this plan in a recent successful case, and with great advantage.

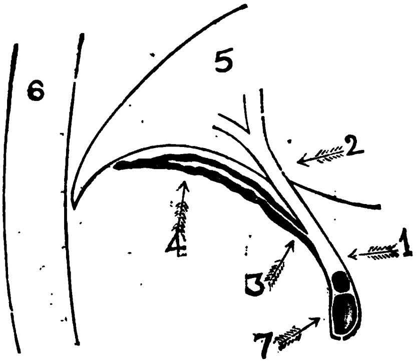

Fig. 5.—Two Calculi in the Common duct, with the Gall-bladder empty, contracted, and thickened.

I come finally to consider the operative treatment of Nos. 5 and 6, to which two only (cholelithotrity and choledochotomy) of the half-dozen named gallstone operations are at all applicable. I have tried them both and have had good results with each, but on the whole I am inclined to favour the major and more radical procedure of choledochotomy. In making the incision into the duct which runs along the free side of the gastro-hepatic omentum, it is well to remember that in the omentum lies also the hepatic artery and to the left and behind is the portal vein. The incision therefore must be made *upon* the calculus, vertically and to the right. An opening at so great a depth cannot be satisfactorily sutured. It is a waste of labour, in my opinion, to attempt it. Give part of the time which would be frittered away in useless suturing to the cleansing of the peritoneum, the careful arranging of the drainage tube and its circumjacent iodoform packing, and your patient's prospects will be benefited. I have now had many experiences of the tamponing of abdominal wounds with iodoform gauze, and have absolute faith in its drainage efficiency and its harmlessness to the peritoneum. In No. 6 separate incisions would have to be made into the contracted gall-bladder and the common duct, and two drainage-tubes might possibly be required.

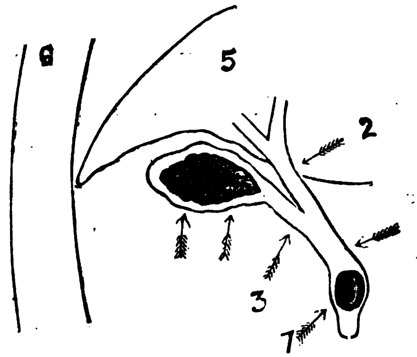

Fig. 6.—Multiple Calculi in a contracted and thickened Gall-bladder, with a Calculus in the Common duct.

My friend, Mr. Rutherford Morison, of Newcastle-on-Tyne, has recently called attention to the advantages offered by transverse incision through the abdominal parietes, affording, as it does, easier access to the structures beneath the liver, and permitting of efficient tube-drainage from the outer angle of the wound. He disapproves of suturing the gall-bladder to the abdominal wall, because of its liability to be followed by permanent fistula; but in this matter I think he is wrong. I have adopted the transverse incision several times lately, and can speak well of it.

I have purposely abstained from referring in detail to my own cases from a desire to save your time, and have purposely avoided reference to the many complications which may result from gallstone disease.

ON A CASE OF ACUTE CATARRH.*

BY ARTHUR FOXWELL, M.A., M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN TO THE QUEEN'S HOSPITAL, BIRMINGHAM.

A FEW days ago some of you were with me at the bedside of a young girl of 15 in a state of high fever, suffering from what I pretty confidently told you was acute general tuberculosis. Three days later, in the *post mortem* room, we found that diagnosis to be wrong, no evidence of tubercle being present. And yet my diagnosis was not arrived at rashly or hastily. It was not definitely made till the third day of her illness, nor till my fourth visit. Moreover, even now, with the result of the *post mortem* before us, I still think I was justified in my view, though not perhaps in holding it with any confidence. And this confidence I should probably have withdrawn had I examined her on the day of her death, for one would think there must then have been evidence of widespread consolidation; but at my last visit she was fast dying, and I thought it not right to disturb her.

Let me now detail the case to you, and add to its narration some explanatory comments, so that you may judge for yourselves of the wisdom of my diagnosis.

E. L., a healthy girl of 15, a press-worker, who, her mother tells us, was the chief stay of her family, was taken suddenly ill at noon on the 9th of November with what appears to have been a distinct rigor, with vomiting, acute pains in her knees, and severe headache. These latter symptoms got steadily worse, and she was brought to the hospital and admitted under my care the same evening. The patient herself had suffered from scarlet fever at the age of 7, ever since which time she had had incontinence of urine. She had only menstruated once, and that was eight weeks previous to her present illness. Her mother believes she got wet through on the 4th instant.

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* A clinical lecture given at the Queen's Hospital.

On admission, she was found to be well developed, though spare, and rather small for her age. Her temperature was 104°. She had severe pains in both ankles, both knees, and both shoulders; but her head was what she chiefly complained of. She kept vomiting a bile-stained fluid, and her tongue was cracked and furred. It was also noted that her heart-sounds were heard better to the right than to the left of the sternum, and that their frequency was great.

The next morning, the 10th, twenty-two hours after the onset of her symptoms, I saw her for the first time, and noted as follows:—The patient lies curled up on her right side, but she is restless and frequently changes her position. She complains scarcely at all now of her joint-pains, but piteously asks for relief from the pain in her head, which, however, she cannot localise. She is conscious, and answers questions readily and quite rationally, though she is said to have active delirium during the night. The pulse is about 140, but very difficult to count by reason of its great irregularity in size and rhythm; with the larger and stronger beats the peripheral tension is noted to be high. There is no sign of a rash on any part of the body. The tonsils are swollen, red, and dry, but there are no white dots or patches on them. The conjunctivæ are suffused, the pupils mobile and equal. No sign of local paresis observed anywhere. The respirations are markedly Cheyne-Stokes in character, and between thirty and forty in the minute. There is no photophobia, but slight dulness of hearing. The abdomen is much retracted, and there is some doughy resistance near the right superior iliac spine, with deficiency of resonance. No *tâche cérébrale.* The heart is greatly upset: its apex-beat is not distinguishable, pulsation is feebly felt in the fifth space 1½ in. to the right and ½ in. to the left of the sternum; a slight thrill was also at one time felt over the second and third right spaces. There is no cardiac dulness to the left of the right edge of the sternum, but on the right there is considerable

ON A CASE OF AC

BY ARTHUR FOXWELL. M.A
PHYSICIAN TO THE QU

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een.) Posteriorly, at the left base the resonance is
general note over the chest is hyper-resonant, and
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this time it was impossible to make any specific diagnosis.
thing, however, seemed sadly certain—viz., that the patient
attacked by a terribly acute septicæmia, from which her
chance of recovery was very slight, as evidenced by the complete overthrow of the heart. The tonsils resembled the condition of these bodies at a corresponding period of scarlet fever; but she had had the disease, the tongue was not of scarlatinal character, and at no time did we notice a red rash. The pains in the big joints made one think of acute rheumatism; but their early vanishment and the absence of effusion at once negatived this supposition. On the other hand, rheumatoid pains are not unknown during the early stages of scarlet fever, though more common later on or during convalescence. Septic pneumonia

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[*] This peculiar area of dulness was probably due to consolidation of the right lung, the resonance on the left being the result of compensatory distension of the left lung. The heart-sounds would naturally be better conducted through the solid lung.

[†] I can only account for this thus: either the consolidation was deep (when dulness would also be probably absent), or the tube leading to the solid area was blocked, and the harsh breath-sounds were those of the still pervious and tensely distended air-sacs.

on most prominently brought before our minds ;
elow the right clavicle appeared too marked to
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e mobility of the chest seemed to
e dulness being due to old pleural
er, the cerebral symptoms were extremely
acute pneumonia in a girl of her age, though they
., the headache, delirium, and Cheyne-Stokes' breathing—
ight be due to poisoned blood. Yet this cerebral condition made me think of more than mere poison in the blood—viz., of meningitis. Now meningitis may accompany pneumonia, and then it is more usually on the convexity of the brain, and not seldom becomes suppurative, but may also arise from miliary tubercles deposited around the vessels in the *pia mater* at the base of the brain ; it then, as a rule, produces local paresis of a cerebral nerve from involvement of its origin in the inflammation. The condition of the lungs—one of general acute hyperæmia with acute emphysema of portions of them—would well agree with the early and rapid deposit of grey tubercle in these organs. It is true the shock of the onset was too sudden and fulminant for acute tuberculosis, but such beginnings do, though rarely, occur.

Such attacks often arise from auto-infection from an old tubercular focus, and the dulness at the right apex suggested such a focus. One of the commonest situations for the deposit of miliary tubercle, according to Cohnheim, is in the choroid, but I regret to say I omitted to examine that membrane, or indeed to use the ophthalmoscope in any way, though, as you know, another very important sign is swelling and indistinctness of the discs.

Cerebro-spinal meningitis is another acute disorder which had to be considered. The pain in the joints, the cervical opisthotonos, the curled-up position in which she lay, all pointed to this ; but the frequency with which she changed her attitude prevented my attaching much importance to her position, and there was no complaint of pain along the course of the spinal cord or nerves.

Typhoid is frequently hard to distinguish from acute tuberculosis; but you will tell me this is when tuberculosis comes on in its more usual and insidious form. And that is quite true. Neither disease commonly is initiated with suddenness and rigor, but both *may* be. Only some six weeks ago I saw, in consultation with a very able practitioner, a girl of 7 who, ten days previously, had been seized in the afternoon with rigor and vomiting and a following temperature of 104°. For seven or eight days this temperature remained high (between 102° and 105°) notwithstanding frequent spongings. The child was quite conscious, bright, and playful, though irritable. In the lungs many rhonchi and râles existed, though no evidence of consolidation. My friend naturally looked upon it as a case of acute pneumonia, and patiently waited for the consolidation to become superficial. As this did not appear, he began to suspect tubercle of the brain, and was on the watch for some local paralysis. Finally, on the tenth day, he sent for me, and then we found the disease had so far developed as to leave but little doubt in our minds that the case was an aberrant one of typhoid, and the subsequent course of the illness confirmed our diagnosis.

But to return to our patient. The next day, the 11th, at 10 a.m. her temperature underwent a great fall, to 101·3°. There had been persistent vomiting and semi-delirious restlessness. After sitting up she became slightly cyanosed, and her circulation was still greatly disturbed, though the pulse was more distinct and regular. The heart's apex was now apparently in the fourth space near the left nipple, but there was much epigastric shock, and the dulness was still more extensive on the right than the left. The breathing was of the same character; but at the right apex, where the dulness was, the BS. were harsh and the expiration long, with increased VR. and occasional fine crepitation. The rhonchi had greatly decreased generally. The mouth was slightly drawn to the right side.

At 2 p.m. the right pupil was slightly larger than the left, though both were equally mobile. The pulse had gone up to 256 (from 132), while the respirations still remained about 28. The pains in the joints had vanished. The vomiting had almost ceased.

The next day, the 12th, the blood was examined, and no tubercle bacilli or other organisms were found in it; nor were there any in a little sputum which had been spat up. The urine was not examined for bacilli. There was but little change in the lung signs, and the respiration was of the same character. The heart's apex beat without the left nipple line, and the aortic second sound was strongly accented. There was now a left convergent squint as well as the facial paralysis, and these increased as the day went on.

It was now that I decided on the tubercular nature of the attack. The local paralyses were almost convincing evidence of basal meningitis, and by far the commonest cause of this at the patient's age is tubercle. The marked nature of the paralyses and their persistence seemed to negative the idea of mere hyperæmia or œdema, especially as the mentality remained so clear.

The P:R. ratio was very much against a pneumonia so violent and acute as this would have to be, as the respirations averaged about 30 to the minute. Moreover, the persistency with which they maintained the Cheyne-Stokes character, and the rapid and great variations of the pulse (as much as from 120 to 250 in the course of two or three hours), pointed to a persisting involvement of the medulla by something more than mere poisoned blood.

The condition of the lungs still remained more significant of tubercle than pneumonia, though the condition of the right apex was now approaching that of consolidation; but this suggestion of pneumonia was outweighed by the cerebral paralyses. Besides, the conjunction of acute pneumonia and acute tuberculosis, though rare, is not unknown.

The next day she again complained of pains in the left arm and both legs. An herpetic rash appeared over the right trochanter. Signs of consolidation were detected at the right posterior base and in the axilla as well as at the right apex. The P:R. ratio became more pneumonic (160 : 52), and the cheeks became more flushed. This was on Sunday, when I did not see her; but it is quite evident, from these notes of Mr. White's, that she then had manifest signs of pneumonic consolidation of most of the upper and lower lobes on the right side. She grew comatose Sunday evening, and was bled to ℥ vi. from the arm, with return of consciousness for two or three hours, and could answer questions when I saw her the next morning, though she was evidently moribund, and died in the evening at 5; again comatose.

Let us once more consider our diagnosis. Acute rheumatism and scarlet fever were put on one side after the first twenty four hours, as the pains in the joints vanished, and no rash nor ulceration of tonsils showed itself.

There remained typhoid, cerebro-spinal meningitis, septic pneumonia, and acute tuberculosis.

The patient did not live long enough to eliminate typhoid: the spleen was enlarged, and that was the only marked sign which could have appeared. But the nature of the onset, the early lung complication, and the presence of meningitis (as we thought) were so exceptional that I did not seriously consider it.

Cerebro-spinal meningitis was a disease to consider throughout. The herpes on the trunk is rather characteristic. But there was never any evidence of spinal pain though the cerebral pain was so marked. Moreover, the presence of spinal irritation, as evidenced by the flexion of the limbs and the pains in the joints, was very uncertain and fugitive.

As I have said, against the pneumonia were—first and chiefly, the definite local cerebral paralyses, which are very rare in this disease, and may be said to only exist in the septic or epidemic form; secondly, we had the absence of any definite signs of pneumonic consolidation, though these appear to have arisen before death; thirdly, there was the comparative slowness of the respirations; fourthly, the marked hectic nature of the continued fever—a daily and regular range of 4°—from 100° to 104°.

Treatment.—Recognising the extreme disturbance of the heart as the chief indication for treatment, she was given ♏ v. of the tr. of strophanthus every two hours. Cold compresses were applied to the head to ease its pain, and three grains of calomel were administered. As the strophanthus was constantly vomited and no relief in any form had arisen, a quarter of one of Nativelle's granules of digitaline was substituted, another dose of calomel was given, and an ice-bag was applied to the head. The next morning, as the bowels were still unopened, a castor oil enema was administered with good result. The vomiting still continuing, her food was limited to a teaspoonful of iced peptonised milk and soda water every half-hour, with this prescription:—

Bism. subnitr.	... ...	gr. v.
Acid. hydrocyan. dil.	...	♏ iii.
Sod. bicarb.	... ...	gr. v.
Aquam ad	... ...	℥ i.

℥ ss. quaqua quarta hora sum.

To reduce the temperature, she was frequently sponged with cold water. Later in the day strophanthus was given per rectum, as the digitaline was also vomited; and she was now fed every three hours with an enema of 3½ oz. of peptonised milk and 4 drachms of brandy. Paraldehyde given in drachm doses by the rectum did some good towards quieting her restless nocturnal delirium.

On the morning of the 12th, having, as I have previously told you, decided in favour of tuberculosis, I placed her on iodoform, this drug having had the best results of any in my hands in the treatment of tubercle. She was given three grains every four hours, and the next day this dose was increased to four grains—that is, twenty-four grains a day—an amount which should be enough to render antiseptic the body of a girl of her age.

ON SOME OF THE LESS COMMON DISEASES OF THE VULVA.

BY JOHN W. TAYLOR, F.R.C.S., ENG.
SURGEON TO THE BIRMINGHAM AND MIDLAND HOSPITAL FOR WOMEN.

(Continued from page 83).

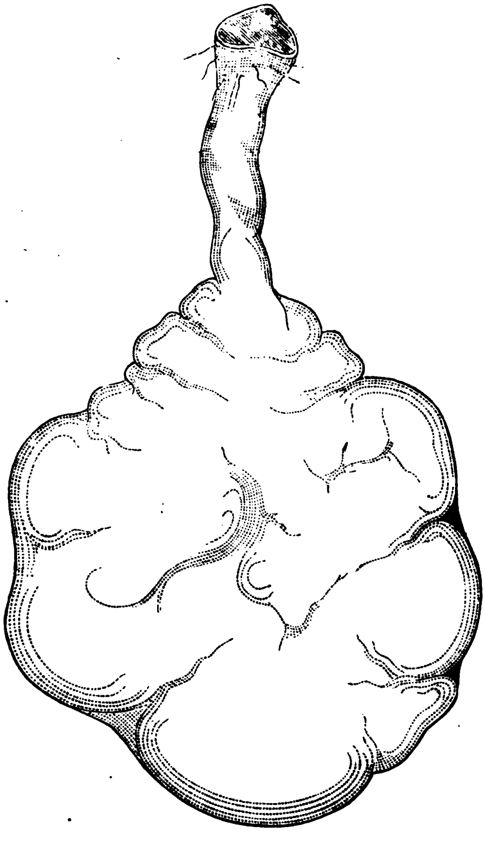
VI.—"MOLLUSCUM PENDULUM" OF THE LABIUM.

THIS curious tumour undoubtedly belongs to the less common diseases of the vulva, but has received only very scant notice from gynæcological writers; and we have to turn to the text-books on diseases of the skin to find any satisfactory account of the growth.

Dühring defines Fibroma molluscum as "a connective tissue new growth, characterised by sessile or pedunculated, soft and firm, rounded painless tumours, varying in size from a split pea to an egg or larger, seated beneath and in the skin." (Diseases of the Skin, third edition, p. 461.)

Crocker writes:—"The tumours which constitute this affection are, for the most part, roundish or teat-shaped. They may be firm in parts, but are generally lax, so that the contents can, when pinched up, be rolled between the fingers. The skin over them is either tense or lax, usually smooth, and of normal colour and surface, though sometimes bluish or pinkish from vascularity; while those with constricted base are of a brownish or brownish-red hue. A hair sometimes, or one or more comedones, conspicuous from their size, are to be seen in the centre. In almost all other respects they present great variety. In number they may be from one or two up to hundreds and even thousands. In size they are from a pin's head to an egg or an orange, or larger, but for the most part they do not exceed a walnut. They are round, oval, pyriform, or polypoid. Some are embedded rather deeply under the skin, and are to be felt rather than seen; others are distinctly raised, but still sessile, and with a broad base like a mollusc; while others, again, have a pedicle, which becomes narrow eventually, and the tumour then hangs flabbily down like a polypus." (Diseases of the Skin, p. 487.)

Of this pedunculated nature was the tumour which is figured in the accompanying pen and ink drawing. It is the largest



Molluscum Pendulum of Labium. Natural size.

growth of the kind which I have removed, but may be regarded as fairly typical of molluscum pendulum as seen in gynæcological practice.

ON A CASE OF ACUTE CATARRH.*

BY ARTHUR FOXWELL. M.A. M.D. CANTAB, F.R.C.P. LOND.,
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On admission, she was found to be well developed, though spare, and rather small for her age. Her temperature was 104°. She had severe pains in both ankles, both knees, and both shoulders; but her head was what she chiefly complained of. She kept vomiting a bile-stained fluid, and her tongue was cracked and furred. It was also noted that her heart-sounds were heard better to the right than to the left of the sternum, and that their frequency was great.

The next morning, the 10th, twenty-two hours after the onset of her symptoms, I saw her for the first time, and noted as follows:—The patient lies curled up on her right side, but she is restless and frequently changes her position. She complains scarcely at all now of her joint-pains, but piteously asks for relief from the pain in her head, which, however, she cannot localise. She is conscious, and answers questions readily and quite rationally, though she is said to have active delirium during the night. The pulse is about 140, but very difficult to count by reason of its great irregularity in size and rhythm; with the larger and stronger beats the peripheral tension is noted to be high. There is no sign of a rash on any part of the body. The tonsils are swollen, red, and dry, but there are no white dots or patches on them. The conjunctivæ are suffused, the pupils mobile and equal. No sign of local paresis observed anywhere. The respirations are markedly Cheyne-Stokes in character, and between thirty and forty in the minute. There is no photophobia, but slight dulness of hearing. The abdomen is much retracted, and there is some doughy resistance near the right superior iliac spine, with deficiency of resonance. No *tâche cérébrale.* The heart is greatly upset: its apex-beat is not distinguishable, pulsation is feebly felt in the fifth space 1½ in. to the right and ½ in. to the left of the sternum; a slight thrill was also at one time felt over the second and third right spaces. There is no cardiac dulness to the left of the right edge of the sternum, but on the right there is considerable dulness over the third space.* The heart-sounds are distinct, but feeble and laboured, and are more distinctly heard on the left of the sternum; the second sound is accented at both bases, but chiefly on the right. The percussion note is deficient from the clavicle to the third cartilage on the right near the sternum. There are rhonchi and sibili scattered throughout both lungs, and in places the breath-sounds are harsh, but nowhere can any definite change in their quality be detected.† The liver dulness appears to be normal, and the organ is not felt in the R.N.L.; but on the left side, from the left edge of the sternum to the mid-axillary line, there is dulness below a horizontal line drawn through the upper part of the seventh sterno-chondral junction. (Probably due to the liver and an enlarged spleen.) Posteriorly, at the left base the resonance is good. The general note over the chest is hyper-resonant, and in places distinctly tympanitic.

At this time it was impossible to make any specific diagnosis. One thing, however, seemed sadly certain—viz., that the patient was attacked by a terribly acute septicæmia, from which her chance of recovery was very slight, as evidenced by the complete overthrow of the heart. The tonsils resembled the condition of these bodies at a corresponding period of scarlet fever; but she had had the disease, the tongue was not of scarlatinal character, and at no time did we notice a red rash. The pains in the big joints made one think of acute rheumatism; but their early vanishment and the absence of effusion at once negatived this supposition. On the other hand, rheumatoid pains are not unknown during the early stages of scarlet fever, though more common later on or during convalescence. Septic pneumonia was the condition most prominently brought before our minds; yet the dulness below the right clavicle appeared too marked to be the result of mere hyperæmia of the subjacent lung, while the absence of any bronchial quality in the breath-sound prevented our admitting the existence of any considerable consolidation there. Lastly, the mobility of the chest seemed to negative the idea of the dulness being due to old pleural thickening. Further, the cerebral symptoms were extremely marked for acute pneumonia in a girl of her age, though they all—viz., the headache, delirium, and Cheyne-Stokes' breathing—might be due to poisoned blood. Yet this cerebral condition made me think of more than mere poison in the blood—viz., of meningitis. Now meningitis may accompany pneumonia, and then it is more usually on the convexity of the brain, and not seldom becomes suppurative, but may also arise from miliary tubercles deposited around the vessels in the *pia mater* at the base of the brain; it then, as a rule, produces local paresis of a cerebral nerve from involvement of its origin in the inflammation. The condition of the lungs—one of general acute hyperæmia with acute emphysema of portions of them—would well agree with the early and rapid deposit of grey tubercle in these organs. It is true the shock of the onset was too sudden and fulminant for acute tuberculosis, but such beginnings do, though rarely, occur.

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* This peculiar area of dulness was probably due to consolidation of the right lung, the resonance on the left being the result of compensatory distension of the left lung. The heart-sounds would naturally be better conducted through the solid lung.

† I can only account for this thus: either the consolidation was deep (when dulness would also be probably absent), or the tube leading to the solid area was blocked, and the harsh breath-sounds were those of the still pervious and tensely distended air-sacs.

Such attacks often arise from auto-infection from an old tubercular focus, and the dulness at the right apex suggested such a focus. One of the commonest situations for the deposit of miliary tubercle, according to Cohnheim, is in the choroid, but I regret to say I omitted to examine that membrane, or indeed to use the ophthalmoscope in any way, though, as you know, another very important sign is swelling and indistinctness of the discs.

Cerebro-spinal meningitis is another acute disorder which had to be considered. The pain in the joints, the cervical opisthotonos, the curled-up position in which she lay, all pointed to this; but the frequency with which she changed her attitude prevented my attaching much importance to her position, and there was no complaint of pain along the course of the spinal cord or nerves.

Typhoid is frequently hard to distinguish from acute tuberculosis; but you will tell me this is when tuberculosis comes on in its more usual and insidious form. And that is quite true. Neither disease commonly is initiated with suddenness and rigor, but both *may* be. Only some six weeks ago I saw, in consultation with a very able practitioner, a girl of 7 who, ten days previously, had been seized in the afternoon with rigor and vomiting and a following temperature of 104°. For seven or eight days this temperature remained high (between 102° and 105°) notwithstanding frequent spongings. The child was quite conscious, bright, and playful, though irritable. In the lungs many rhonchi and râles existed, though no evidence of consolidation. My friend naturally looked upon it as a case of acute pneumonia, and patiently waited for the consolidation to become superficial. As this did not appear, he began to suspect tubercle of the brain, and was on the watch for some local paralysis. Finally, on the tenth day, he sent for me, and then we found the disease had so far developed as to leave but little doubt in our minds that the case was an aberrant one of typhoid, and the subsequent course of the illness confirmed our diagnosis.

But to return to our patient. The next day, the 11th, at 10 a.m. her temperature underwent a great fall, to 101·3°. There had been persistent vomiting and semi-delirious restlessness. After sitting up she became slightly cyanosed, and her circulation was still greatly disturbed, though the pulse was more distinct and regular. The heart's apex was now apparently in the fourth space near the left nipple, but there was much epigastric shock, and the dulness was still more extensive on the right than the left. The breathing was of the same character; but at the right apex, where the dulness was, the BS. were harsh and the expiration long, with increased VR. and occasional fine crepitation. The rhonchi had greatly decreased generally. The mouth was slightly drawn to the right side.

At 2 p.m. the right pupil was slightly larger than the left, though both were equally mobile. The pulse had gone up to 256 (from 132), while the respirations still remained about 28. The pains in the joints had vanished. The vomiting had almost ceased.

The next day, the 12th, the blood was examined, and no tubercle bacilli or other organisms were found in it; nor were there any in a little sputum which had been spat up. The urine was not examined for bacilli. There was but little change in the lung signs, and the respiration was of the same character. The heart's apex beat without the left nipple line, and the aortic second sound was strongly accented. There was now a left convergent squint as well as the facial paralysis, and these increased as the day went on.

It was now that I decided on the tubercular nature of the attack. The local paralyses were almost convincing evidence of basal meningitis, and by far the commonest cause of this at the patient's age is tubercle. The marked nature of the paralyses and their persistence seemed to negative the idea of mere hyperæmia or œdema, especially as the mentality remained so clear.

The P:R. ratio was very much against a pneumonia so violent and acute as this would have to be, as the respirations averaged about 30 to the minute. Moreover, the persistency with which they maintained the Cheyne-Stokes character, and the rapid and great variations of the pulse (as much as from 120 to 250 in the course of two or three hours), pointed to a persisting involvement of the medulla by something more than mere poisoned blood.

The condition of the lungs still remained more significant of tubercle than pneumonia, though the condition of the right apex was now approaching that of consolidation; but this suggestion of pneumonia was outweighed by the cerebral paralyses. Besides, the conjunction of acute pneumonia and acute tuberculosis, though rare, is not unknown.

The next day she again complained of pains in the left arm and both legs. An herpetic rash appeared over the right trochanter. Signs of consolidation were detected at the right posterior base and in the axilla as well as at the right apex. The P:R. ratio became more pneumonic (160 : 52), and the cheeks became more flushed. This was on Sunday, when I did not see her; but it is quite evident, from these notes of Mr. White's, that she then had manifest signs of pneumonic consolidation of most of the upper and lower lobes on the right side. She grew comatose Sunday evening, and was bled to ℥ vi. from the arm, with return of consciousness for two or three hours, and could answer questions when I saw her the next morning, though she was evidently moribund, and died in the evening at 5; again comatose.

Let us once more consider our diagnosis. Acute rheumatism and scarlet fever were put on one side after the first twenty four hours, as the pains in the joints vanished, and no rash nor ulceration of tonsils showed itself.

There remained typhoid, cerebro-spinal meningitis, septic pneumonia, and acute tuberculosis.

The patient did not live long enough to eliminate typhoid: the spleen was enlarged, and that was the only marked sign which could have appeared. But the nature of the onset, the early lung complication, and the presence of meningitis (as we thought) were so exceptional that I did not seriously consider it.

Cerebro-spinal meningitis was a disease to consider throughout. The herpes on the trunk is rather characteristic. But there was never any evidence of spinal pain though the cerebral pain was so marked. Moreover, the presence of spinal irritation, as evidenced by the flexion of the limbs and the pains in the joints, was very uncertain and fugitive.

As I have said, against the pneumonia were—first and chiefly, the definite local cerebral paralyses, which are very rare in this disease, and may be said to only exist in the septic or epidemic form; secondly, we had the absence of any definite signs of pneumonic consolidation, though these appear to have arisen before death; thirdly, there was the comparative slowness of the respirations; fourthly, the marked hectic nature of the continued fever—a daily and regular range of 4°—from 100° to 104°.

Treatment.—Recognising the extreme disturbance of the heart as the chief indication for treatment, she was given ♏ v. of the tr. of strophanthus every two hours. Cold compresses were applied to the head to ease its pain, and three grains of calomel were administered. As the strophanthus was constantly vomited and no relief in any form had arisen, a quarter of one of Nativelle's granules of digitaline was substituted, another dose of calomel was given, and an ice-bag was applied to the head. The next morning, as the bowels were still unopened, a castor oil enema was administered with good result. The vomiting still continuing, her food was limited to a teaspoonful of iced peptonised milk and soda water every half-hour, with this prescription:—

Bism. subnitr.	... ...	gr. v.
Acid. hydrocyan. dil.	...	♏ iii.
Sod. bicarb.	... ...	gr. v.
Aquam ad	... ...	ʒ i.

ʒ ss. quaqua quarta hora sum.

To reduce the temperature, she was frequently sponged with cold water. Later in the day strophanthus was given per rectum, as the digitaline was also vomited; and she was now fed every three hours with an enema of 3½ oz. of peptonised milk and 4 drachms of brandy. Paraldehyde given in drachm doses by the rectum did some good towards quieting her restless nocturnal delirium.

On the morning of the 12th, having, as I have previously told you, decided in favour of tuberculosis, I placed her on iodoform, this drug having had the best results of any in my hands in the treatment of tubercle. She was given three grains every four hours, and the next day this dose was increased to four grains—that is, twenty-four grains a day—an amount which should be enough to render antiseptic the body of a girl of her age.

ON SOME OF THE LESS COMMON DISEASES OF THE VULVA.

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(Continued from page 83).

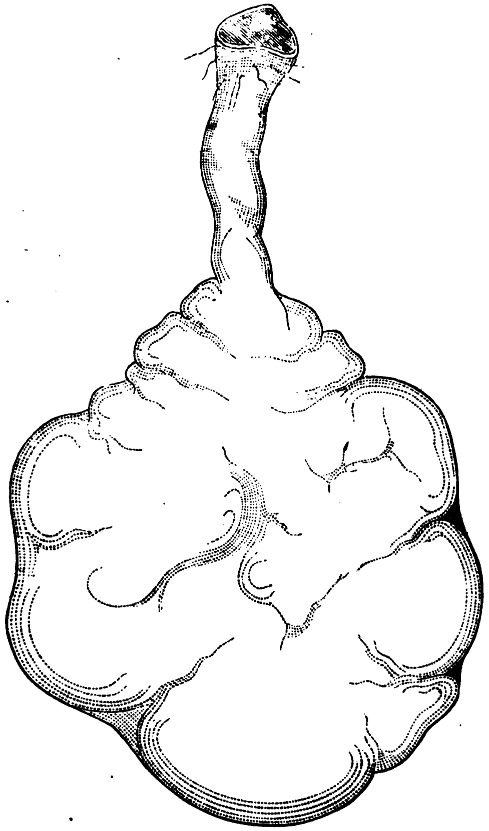
VI.—"MOLLUSCUM PENDULUM" OF THE LABIUM.

THIS curious tumour undoubtedly belongs to the less common diseases of the vulva, but has received only very scant notice from gynæcological writers; and we have to turn to the text-books on diseases of the skin to find any satisfactory account of the growth.

Dühring defines Fibroma molluscum as "a connective tissue new growth, characterised by sessile or pedunculated, soft and firm, rounded painless tumours, varying in size from a split pea to an egg or larger, seated beneath and in the skin." (Diseases of the Skin, third edition, p. 461.)

Crocker writes:—"The tumours which constitute this affection are, for the most part, roundish or teat-shaped. They may be firm in parts, but are generally lax, so that the contents can, when pinched up, be rolled between the fingers. The skin over them is either tense or lax, usually smooth, and of normal colour and surface, though sometimes bluish or pinkish from vascularity; while those with constricted base are of a brownish or brownish-red hue. A hair sometimes, or one or more comedones, conspicuous from their size, are to be seen in the centre. In almost all other respects they present great variety. In number they may be from one or two up to hundreds and even thousands. In size they are from a pin's head to an egg or an orange, or larger, but for the most part they do not exceed a walnut. They are round, oval, pyriform, or polypoid. Some are embedded rather deeply under the skin, and are to be felt rather than seen; others are distinctly raised, but still sessile, and with a broad base like a mollusc; while others, again, have a pedicle, which becomes narrow eventually, and the tumour then hangs flabbily down like a polypus." (Diseases of the Skin, p. 487.)

Of this pedunculated nature was the tumour which is figured in the accompanying pen and ink drawing. It is the largest growth of the kind which I have removed, but may be regarded as fairly typical of molluscum pendulum as seen in gynæcological practice.



Molluscum Pendulum of Labium. Natural size.

In contradistinction to the disease as described by dermatologists, the tumour, when growing from the vulva, is remarkably uniform in type, size, and appearance. It is single, its size is that of a small Mandarin orange, it grows from one labium and hangs from it by a more or less marked peduncle, and the upper part of the peduncle is usually the seat of some scattered growth of hair, which extends from the labium downwards. There must of course have been a process of growth, as the history of each case extends backwards for several years. There must have been a time when the growth was sessile and small, but I have never had an opportunity of seeing a case at this stage. The reason of this appears to be sufficiently obvious. The growth intrinsically is absolutely painless, and so long as the patient can put up with her infirmity, she will conceal her trouble even from her nearest relations. But when the tumour becomes thoroughly pedunculated, new conditions arise, which are apt to be followed by serious changes in the tumour and special discomfort to the patient. The increasingly imperfect blood supply of the little growth, its own weight, and especially the momentary torsion of the pedicle which necessarily occurs in walking, produce œdema of the skin covering or forming the tumour. A slight abrasion of its surface may be followed by unhealthy ulceration, and, in spite of the supposed painless character of the affection, the tumour, under these conditions, can become acutely painful and a constant source of misery to the patient. Before or by the time this stage is reached, she will seek advice.

The growth may occur at any age after childhood, but is more frequently seen in middle life. The skin which covers or forms the growth—for there is usually a central irregular nodule or plaque of fibrous tissue which represents the consolidated connective tissue of the deeper layers of the corium rather than any true fibrous tumour—partakes of the general character of the patient's skin; for instance, in the case from which my illustration is taken, the skin is plump and well-nourished, the patient being a single girl of only twenty-one years of age, while in two other specimens, now before me, which I removed from patients of thirty-eight and thirty-nine years of age respectively, the skin forming the molluscum is thinner, more wrinkled, and already shows signs of age.

These three cases represent, I believe, all the examples of this tumour which I have met with in my Hospital practice during six years. Taking a rough average of eighteen new out-patients every week this would give a proportion of 1 in 1,800 cases of diseases peculiar to women. So far as I have been able to watch the practice of my colleagues in addition to my own I think this would approximately represent the frequency with which molluscum pendulum of the labium occurs in gynæcological practice in the midlands.

The treatment consists in the removal of the tumour close to the labium. This is best done by a small flap operation cutting slightly into the tissue of the labium. A small vessel in the centre of the pedicle may need forcipressure or ligature. The flaps are brought together and united by a very fine silk suture. My last case was operated on in this way and the little wound was completely healed in four days.

AN UNCONSIDERED FACTOR IN THE PRODUCTION OF PREMATURE BALDNESS.

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HIPPOCRATES and Aristotle asserted that women were "exempt from baldness," and gave, as a reason, that they were not subject to the exhaustion attending the service of Venus in the same degree as men. This explanation is probably as correct as that of Grellier, who believed that baldness was more common in men than in women owing to the smaller quantity of fat beneath the scalp in males than in females.

But while the explanation does not commend itself to modern ideas, it throws light upon the prevailing views of antiquity, and is interesting as affording a reason for the opprobrium which, without doubt, attached to baldness. Julius Cæsar's lack of hair was a source of constant annoyance to him, for in public opinion it was a matter of reproach.

While, however, it is not quite true that women do not become bald, it is correct to say that women become bald much less frequently, in a less degree, and later in life than men, although considerable thinning of the hair does very frequently take place in them. A consideration of the significance of this relative condition in the two sexes will not be without interest, and it is an observation which is the common property of medical and lay men.

"I am getting bald as quickly and as certainly as possible, while my wife, who is 55 years old, and who has been throughout her life a martyr to severe headaches, has still a magnificent head of hair." This is a tpye of the remarks business men often address to the historically talkative barber as the latter snips away his locks. The words are such as barbers hear daily, and words which generally lead to interchange of views between the hair-cutter and the hair-cuttee on the pathology and therapeutics of this decadent tendency of the scalp masculine. These popular views do not advance or change much. "You see with our head gear there's no ventilation; that's the reason we lose our hair." The association of the circumstances justifies the sequence in the opinion of both, and they separate mutually satisfied that they have settled the little point. It is not material that this view was held a century ago, and that since that time convention has periodically punctured men's hats with ventilating holes without affecting the tendency. The ventilation is inefficient and therefore non-effective, it is said, in order to make results square with theory. Just as it is now, so also formerly was great prominence attached to the necessity for securing free access of air to the hair, although, as a matter of fact, this is probably a factor of very small importance, for certainly the male habit of hair-cutting facilitates this access of air as nothing else could. Our example, Cæsar, indeed, went bareheaded in all sorts of weather.

Medical men have begun to distrust their old views about this same ventilation, and have thought it wise to step forward a little; so now it is the resisting nature of the material from which our head gear is manufactured that should be blamed. "The hard felt offers marked obstruction to the circulation through the temporal and other scalp arteries by compressing them against the hard sublying skull bones, with the result that the nutrition and vitality of the hair is impaired, and baldness results." All this is a mere revival of the teaching of Cazenave, Rostan, and Précy; and no doubt there is some truth in it; but its authors lack the sense of proportion. It also is only a small element in the matter.

A much more obvious and exact explanation lies at hand. What I wish to emphasise in this note is an association which seems to have been strangely overlooked. As mentioned in the first paragraph, premature loss of hair is very much commoner in men than in women. And this marked difference in the two sexes coincides with very marked differences in the conventional treatment of the hair. The association and relation of these two circumstances obviously agree with and are an example of the well-known pathological proposition that disuse leads to atrophy. In men the hair is habitually cut short from childhood, while in women the converse is almost universally true. In boyhood and manhood by clipping or cutting the hair we remove the gentle traction on the bulb and follicle which the natural weight of the hair exercises, and which constitutes the essential and natural stimulus necessary to secure due innervation and vascular supply to the hair-producing structures. Loss of vigour, and finally more or less pronounced atrophy, is the inexorable result, modified or delayed, it may be, by collateral circumstances, predispositions, or conditions. In the light of the same consideration, the rationale of the beneficial influence of regular, gentle, and prolonged dressing and brushing of the hair is to be sought for in the stimulating influence of traction upon the circulation within the hair bulb and follicle.

In ordinary cases of premature baldness, excluding of course cases due to alopecia areata, we simply have a partial application of the scientific principle of panmixia, according to which every faculty must disappear as soon as it ceases to be necessary. The protective function of the hair is trespassed upon by the more or less substitution of artificial coverings. But this is not all; indeed it is really but a small factor in the matter compared with the conventional systematic cutting or removal of what Nature designs to be for both sexes at once an ornamental and a useful appendage. Even in cases owning other elements of causation, as, for example, seborrhœa or syphilis, this pathogenetic factor of induced atrophy of the bulb cannot be eliminated from the proper consideration of the equation, for it constitutes the most weighty consideration in the prognosis not only of simple premature baldness, but of alopecia seborrhœica, and alopecia syphilitica. As might from the circumstances be expected, seborrhœa in women is much less often accompanied with so marked a defluvium as in men, the reason being that, where the hair has been habitually worn long, the important factor of induced functional debility or atrophy is absent.

Moreover, treatment is much more successful in women, and the prognosis is invariably and infinitely better than in men. I recently treated a case of alopecia pityrodes in a lady who for some years had worn her hair short. The result was satisfactory, much more so than is usually the case in men, and I think we are right in assuming more satisfactory than would have been the case had the patient, like a boy and man, adopted the clipped fashion from early childhood instead of for a few years only.

Again, alopecia, as a symptom of the syphilitic dyscrasia in women, is generally noticed as a passing and unimportant manifestation only, and very seldom to the marked extent that it may be found in men. In these cases also the prognosis undoubtedly is that the duration and necessity for treatment are less in women than in men.

Some examples of the emancipated woman are wont to show forth their emancipation by cutting their hair short, and so asselfing a peculiarly mannish convention. If the hair so got rid of is beautiful in quality, this is indeed a sacrifice to an ideal, as the cutting of the hair by men was originally a compliance with an ideal, although in later times obviously a convenience. Jeremiah puts cutting off the hair in the same class as circumcision, which, like other mutilations, has been shown to be of the nature of a representative sacrifice.

It may be pointed out to these ladies that such a proceeding is a retrogression and not an advance, since it opposes Nature. The hair by nature is long. In the case of women our convention respects the universality of law, and the hair is worn long. In the case of men and emancipated hair-cropped women, we contravene Nature's law, and Nature's revenge is—slowly, perhaps, but none the less surely—atrophy.

Other ladies cut the hair short under the strangely mistaken idea of strengthening it. This error I shall refer to at greater length in a subsequent note, and for the present it will be sufficient to point out that in the light of what has gone before, this error is as strange in conception as it is faulty in result.

THE JEWISH METHOD OF SLAUGHTER.

THE English translation of Dr. Dembo's account of his investigations into the comparative merits and demerits of the various methods of slaughter now in use brings into prominence a question of some interest to the members of the medical profession. It is not only that the subject demands attention from the point of view of humanity—although the choice of a method which shall involve the least possible infliction of pain is a matter on which we ought clearly to have something to say; but, as Dr. Dembo shows, questions of hygiene and economy are more closely connected therewith than many of us have hitherto realised. We venture, therefore, to call attention to a few of the chief points on which emphasis is laid in this important book.

Dealing first with the matter from the humanitarian standpoint, Dr. Dembo makes out a strong case indeed in favour of the Jewish method of slaughter, or "Shecheta." In this method the carotid arteries are directly opened by a cut with a sharp knife, the so-called "Shochet," with the result that a very large volume of blood is at once poured forth, the supply to the brain is completely stopped (except as regards the insignificant quantity conveyed by the vertebral arteries), and an extremely rapid fall of blood-pressure takes place. Dr. Dembo's repeated observation that under these circumstances consciousness is completely and invariably lost in from three to five seconds needs no arguments to recommend it to anyone acquainted with the facts of medicine or physiology; and that part of the book which is devoted to a demonstration of the impossibility of any prolongation of or return to consciousness, and of the purely reflex nature of the convulsions, vomiting, and other apparently voluntary acts which may follow—and which, it must be noted, equally follow other methods of slaughter—strikes the medical reader as somewhat unnecessary and laboured. It must, however, be remembered that the author does not write for the medical profession alone, but that he has to meet objections raised by those who are innocent of all such technical knowledge. Apart from these quite certainly futile objections, the chief arguments raised against the method lie, first, in the rather more elaborate preparations involved in binding and laying down the animal, and secondly, in the pain involved in cutting through the sensitive structures of the neck. With regard to the first point, we may note that Dr. Dembo describes an extremely simple and rapid method of performing these preparations, which results in the laying down of the animal without struggling or violence of any sort. As to the second point, the fact is undeniable that such pain is inflicted. But the real question to be decided is whether or no the other methods of slaughter now in use are at all more merciful in this respect. That this is not the case, we think Dr. Dembo fully proves. The methods are as follows:—

Transfixion of the neck with a pointed knife or two-edged dagger, which, after piercing the principal blood-vessels, is either left in the wound or made to cut its way out through the soft structures. The first of these two alternatives is adopted in those abattoirs in which the blood is collected for the manufacture of albumen; it involves a slow death and is obviously unjustifiable. The other, which approaches more nearly the Jewish method, and differs from it only in the less efficient manner in which the large arteries are opened, is usually adopted in England in the slaughter of sheep and calves.

Stunning with the *Mallet* or *Poleaxe.*—Both of these methods, as well as those which follow, are employed in slaughtering cattle; and in both the animals are supposed to be rendered unconscious before any cutting operations are undertaken. In the latter method, a hole is first made in the skull, through which a cane is inserted with the object—rarely attained, however—of destroying the medulla oblongata. After unconsciousness has been produced, the carotid arteries are opened, and the animal bleeds to death. In order to realise how utterly illusory is the idea that by such means a rapid loss of consciousness and insensibility to pain is produced, one has only to read Dr. Dembo's account of his own experiences in many of the principal slaughter-houses of Europe. So far from unconsciousness being produced by a single blow, either with the mallet or the poleaxe, we find that it is the exception for the animal even to fall down after the first blow, whilst Dr. Dembo concludes that on an average from five to six are required before it is sufficiently stunned to enable the butcher to complete his work; and several instances are quoted in which a long interval — in one case amounting to as much as twelve minutes—elapsed between the striking of the first blow and the occurrence of unconsciousness. The torture involved in such a process must be infinitely greater than the temporary pain produced by a cut with a sharp knife and followed by certain unconsciousness in a period amounting to at most five seconds.

Amongst other methods may be mentioned ***Bruneau's Mask***, which is only a modification of the poleaxe, and *Sigmund's Shooting Mask*, both of which have met with so little success that they are scarcely used even in those abattoirs which are presided over by their inventors.

Finally, in the ***Neck-stab***, a method much in use in Russia, and to a less extent in Germany and some other countries, in which a knife is thrust between the occipital bone and the first cervical vertebra, and the spinal cord completely severed, not only has Dr. Dembo shown by dissections that the supposed destruction of the medulla cannot possibly be effected in the usual manner of dealing the blow, but he has repeatedly found that the animal remains fully conscious whilst the further operations are performed.

The superiority of the Jewish method from the point of view of humanity is thus, we think, fully established; and in England, where probably the most prolonged of all methods—namely, that of slaughter with the poleaxe—is in vogue, the appearance of this book should not fail to produce some modification in our methods of procedure.

The hygienic aspect of the matter affords even less room for doubt than the humanitarian. Even on theoretical grounds it would seem reasonable to suppose that that meat would be least prone to decomposition in which the vessels have been most completely drained of their blood. That in this respect the preference lies with the Jewish method there can be no manner of doubt, for, with the exception of that by transfixion, it is the only one in which the brain and spinal cord remain intact. In all the other methods, on the other hand, a greater or less degree of vasomotor paralysis is invariably produced by the processes which are necessary to cause unconsciousness; and it appears to be admitted on all hands that, for this reason, materially less blood escapes in them than in the former method.

Dr. Dembo has, however, furnished positive evidence as to the hygienic superiority of the shecheta. Starting with the assumption that the early onset and long duration of rigor mortis are essential for the provision of wholesome meat, he shows, by a number of experiments, that in the Jewish method rigor mortis not only begins in but little less than half the time required in other processes, but that its duration is greater by several days. Moreover, by actual estimation of the amount of ammonia produced at various stages of decomposition, he has proved that its formation both in high and low temperatures, is much less rapid—an observation which only confirms the quoted experience of several butchers to the effect that meat obtained by the former method of slaughter can, even in summer, be preserved longer by two days than that obtained by other methods.

The advantage from the economic view lies also, as far as the public is concerned, with the Jewish method, inasmuch as the more complete emptying of the blood-vessels diminishes the weight, and therefore the relative price of the meat. Compensation to the butcher would, however, probably be effected by a corresponding alteration in the rate of charges.

This summary of the matter will, we hope, serve to draw attention to a subject which is important in these respects, and which, we cannot help thinking, is one on which the medical profession may fairly be expected to pronounce an opinion. If the Jewish method of slaughter is really the least painful, and at the same time produces the most wholesome meat, the sooner some move is made in the direction of its general introduction the better will it be for all parties concerned.

REPORTS OF CASES.

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A CASE OF STRANGULATED UMBILICAL HERNIA, COMPLICATED WITH PREGNANCY.

OPERATION ; ABORTION ; RECOVERY.

BY J. HAZELWOOD CLAYTON, M.B.
CASUALTY SURGEON TO THE QUEEN'S HOSPITAL.

M. C., a married woman aged 44, was admitted, on April 4th, 1894, into the Queen's Hospital with a strangulated umbilical hernia. The hernia was of about ten years' duration, and was the size of a large cocoa-nut. There had been intestinal obstruction, with vomiting, for a week. The patient had had fifteen children, the hernia appearing after the birth of the third. Her health had been good, though at the time of admission she was suffering from a severe attack of bronchitis.

On admission, the patient stated that she had been admitted two years previously under Mr. Jordan Lloyd, and had worn the truss then ordered until a fortnight ago, when she left it off as it caused pain. The swelling felt nodulated, and evidently contained a large mass of omentum, whilst at the lower part a distended coil of intestine could be recognised. The skin was thin and of a brown colouration. She had had no movements of the bowels for over a week, and had pain and tenderness in her hernia, and was vomiting frequently a brownish frothy material, which was however free from fæcal odour. The rectum was empty, and enemata returned without producing any result.

On April 5th, the symptoms having progressively increased, I decided to operate. A median longitudinal incision over the swelling was made. Some clear yellow fluid escaped on opening the sac, and an omental mass presented. On separating the adherent omentum from the sac, a portion of the transverse colon, deeply congested, and a distended coil of small intestine were seen; whilst passing from the upper margin of the ring to the umbilical cicatrix was visible the round ligament, and this, as it passed over the transverse colon, mainly assisted in producing the obstruction. The edges of the ring were thickened and rounded. The round ligament was ligatured as far up as possible and divided, the omentum ligatured in four portions with silk, and removed. The intestine returned, the sac cut away, and the neck sutured with silk, the aponeurotic edges of the ring approximated with silk-worm gut, the excess of skin removed, and the edges sutured with silk.

April 6th. Patient comfortable, no more vomiting, no movement of bowels, and, according to her own statement, no passage of flatus. Bronchitic condition bad. Nothing allowed by mouth. During the temporary absence of the nurse, the patient got out of bed, about 4 p.m., to drink from the water-jug.

April 7th. At 4 a.m. premature labour set in, and a fœtus (between fifth and sixth months) expelled, with membranes entire and placenta attached. The uterus was washed out with sterilised water. The abdominal wound healed, and no tension on the stitches. The bronchitic condition rather better. Flatus freely passed.

April 8th. Uterine discharge scanty, but not offensive. No pain.

April 19th. Vaginal discharge very slight. Abdominal wound quite healed. Regular action of the bowels.

April 24th. Patient allowed to get up.

April 26th. Patient discharged cured.

This case presents several points of interest. The patient had not the faintest suspicion that she was pregnant, and the distended coils of intestine completely masked the enlarged uterus. In spite of the patient having got out of bed, and the subsequent expulsion of the fœtus within 48 hours of the operation, there was no separation of the abdominal wound, but firm union, and the recovery was rapid and complete. The chief point of interest lay, however, in the relation of the round ligament to the contents of the hernial sac; and it would seem probable that this fœtal remnant plays a much more important part in causing obstruction in umbilical herniæ than it has hitherto been credited with.

CLINICAL NOTES
FROM THE CHILDREN'S HOSPITAL.

BY GEORGE HEATON, M.B., F.R.C.S.
SURGEON TO THE HOSPITAL.

THE following cases, which illustrate some of the more uncommon surgical ailments of children, have been under my care during the past few months.

Large Venous Nævus of the Tongue, causing sudden death from Asphyxia.—A. W., a female infant æt. 4 months, was admitted into the Hospital on July 17th, 1894, suffering from a swelling of the tongue causing dyspnœa. The tongue was swollen at birth, but had increased considerably in size during the few weeks before admission. On admission, the tongue was much enlarged and protruded from beyond the lips, causing the cheeks to bulge. Occasionally the organ could be retracted within the mouth. Any local stimulation caused it at once to swell and completely fill the mouth. The swelling was caused by a large cavernous nævus situated chiefly in the left half of the organ and extending backwards to the epiglottis. The dyspnœa was most marked at night and occasionally threatened to suffocate the child.

On July the 26th, the infant was anæsthetised and an attempt made to produce consolidation of the nævus by electrolysis. Three steel electrodes connected with the positive pole of a galvanic battery and one connected with the negative pole were inserted deeply into its substance, and a current from four cells passed through for eight minutes. Under its influence the nævus seemed to swell and harden. There was troublesome hæmorrhage on removal of the electrodes. No appreciable improvement followed the operation, and it was decided to ligature the lingual arteries on both sides in the hope of curing the nævus.

This was done on August 9th. Chloroform was again given, and Mr. Heaton ligatured both lingual arteries through the usual curved incision on each side. No difficulty was experienced in the operation and both wounds were closed and healed by primary union. The operation had the effect of greatly reducing the size of the nævus and the tongue became of normal size for some time. Before the patient was discharged from the hospital, however, on August 22nd, the tongue had again begun to increase in size, but was causing no symptoms of dyspnœa. The child was seen at regular intervals and progressed well until the beginning of December, when the nævus rapidly enlarged and caused occasionally attacks of dyspnœa. Towards the end of December these attacks became more severe, and on December 27th the child died suddenly in a suffocative attack, some 4½ months after the last operation.

Tubercular Caries of the Tarsus; tarsectomy; cure.—J. C., aged 5, a delicate strumous boy, was admitted with advanced tubercular disease of the left tarsus, on October 30th, 1894. Swelling of the foot with pain and tenderness had been noticed for 18 months before admission, and the foot had been kept completely at rest in plaster cases for six months. But in spite of treatment, abscesses formed on the inner side of the dorsum of the foot, burst and had left two discharging sinuses leading down to carious disintegrating bone in the region of the scaphoid and cuneiform bones, and surrounded by thin undermined skin infiltrated with tubercular products.

On November 20th, the patient was anæsthetised and the limb rendered bloodless with an Esmarch's bandage. A longitudinal incision was made on the inner side of the foot and converted into a T-shaped one by an incision across the dorsum. The carious bone was completely removed and consisted of the head of the astragalus, the scaphoid, and internal and middle cuneiform bones. All diseased skin was cut away, and the large cavity thus left filled with boracic acid powder and a 10 per cent. emulsion of iodoform in glycerine, and the wound dressed with iodoform gauze.

The wound was not disturbed for three weeks, and at the end of that time, on December 11th, only a superficial granulating patch remained where the tubercular skin had been cut away. When last seen, on January 20th, 1895, the foot was quite sound, and the patient could walk on it with only a slight limp.

Congenital Fæcal Fistula at the Umbilicus, due to persistence of the omphalo-mesenteric duct; death; necropsy.— J. Y., a male infant, was admitted into the Children's Hospital on October 30th, 1894, with a fæcal discharge from the navel. The history given was that at birth nothing abnormal was noticed by the midwife, who ligatured the cord in the usual way. Fæces were passed per anum for the first two days after birth, but at the same time there was some fæcal discharge from the navel. From that time up to the date of the child's admission into hospital when 16 days old, all his motions had been passed through the navel.

On admission the child was extremely emaciated. At the umbilicus was a fæcal fistula with considerable prolapse of mucous membrane of the bowel through it. On examination of the fistula no spur could be detected, and there appeared to be only one channel connecting the intestine with the fistulous opening. The rectum and anus were normal, and contained some small hard scybala. The child took its food ravenously, but passed only semi-digested curds through the abnormal opening.

An attempt was made to induce closure of the fistula by means of a piece of elastic tubing, which by its pressure should resist the outflow of fæces, and induce them to pass along the bowel. This however caused obstinate vomiting and had to be discontinued. Enemata per rectum were given, and brought away a small amount of fæces, but with this exception all fæces were passed through the umbilicus until the child's death on November 6th.

On making a *post mortem* examination the fistula at the umbilicus was found to lead into a short diverticulum arising from the ileum about seven or eight inches from the ileo-cæcal valve. The bowel above the diverticulum was of normal size, but below it both small and large intestine were much contracted. The cæcum and vermiform appendix lay in the true pelvis attached to the sacrum by a complete meso-cæcum. From this the ascending colon passed upwards on the left side of the spinal column and then passed over above the umbilicus to the normal situation of the hepatic flexure, and from there followed a normal course.

Multiple Pedunculated Adenomata of the Rectum.—A. T., a boy aged 4, was brought to the Hospital on July 24th, 1894, with a history of bleeding from the bowel. For more than a year the child had been noticed to strain much whilst at stool and passed with the motions a varying quantity of blood and mucus. During the few months before admission this trouble had increased, and on five occasions small "masses of flesh" had been noticed in the stools. One of these on examination was found to be a soft fleshy mass, and under the microscope had the structure of a columnar-celled adenoma. On an examination of the rectum several smaller masses could be felt. An anæsthetic was given on July 27th and the anus well dilated. Two large and five or six small pedunculated bright-red polypi were seen growing from the mucous membrane of the rectum. They were extremely vascular and bled readily when touched. The larger masses were ligatured and excised. The smaller ones were torn away and the bleeding stopped with the actual cautery. The child was discharged well ten days later. Six months later the child was again thoroughly examined under an anæsthetic. The rectum was thoroughly exposed, but no trace of polypi seen.

Renal Calculus; nephrolithotomy; recovery. — W. T., a boy aged 11 years, was admitted into Hospital under Dr. Richards on November 21st, 1894, suffering from pains in the left loin. There was a history of pain in the left side for twelve months past with an occasional passage of urine resembling "port wine." During the intervals the urine was quite natural. The attacks of pain were at times extremely severe, but had no connection with the act of micturition and were not predisposed to by exercise.

A few days after admission, on November 25th, the boy had an attack of pain and passed urine containing a large quantity of blood. An examination of the abdomen and of the bladder gave negative results. Neither kidney could be felt, there was no stabbing pain to be elicited on sharp pressure over the renal region, and little if any tenderness in that region. A diagnosis of left renal calculus was made and the case transferred to Mr. Heaton.

On December 4th, the patient was anæsthetised, and Mr. Heaton explored the left kidney. No stone could be detected by the fingers, but on exploring the kidney in several directions with a sharp needle, a calculus was detected in one of the lower calyces. A tenotome was introduced and two small uric acid calculi extracted with the fingers and lithotomy scoop. The wound in the kidney bled freely and was plugged with iodoform gauze. The skin wound was closed except in its middle.

The shock after the operation was extreme. Though the colour remained good, yet the pulse in the extremities was almost imperceptible for some hours. He afterwards made a rapid and uneventful recovery. The packing was removed on the second day and a drainage tube substituted; and this was finally removed on December 9th. The urine remained "smoky" until December 15th, when all trace of blood disappeared. On December 25th and a few following days a slight trace of blood was again detected in the urine, but afterwards disappeared, and he was discharged well on January 9th. The stones were composed entirely of uric acid and weighed 35 grs. and 5 grs. respectively.

A CASE OF ENUCLEATION OF MYOMA OF THE UTERUS FILLING THE PELVIS.

BY FRED EDGE, F.R.C.S., WOLVERHAMPTON.

L. M., aged 48. Anæmic and pale. She has had three children. For the last fourteen months she has lost heavily at her periods and has had excessive leucorrhœa in the intervals. There was great weight and sense of pressure in the pelvis, and other general symptoms were present. There was no mistaking the presence of a large rounded mass filling up the pelvis, and so closely applied to the symphysis that it appeared to grow from the back of the latter. It was almost immovable and could not be elevated out of the pelvis even on using considerable force from the vagina. It was dull on percussion, felt hard, did not fluctuate, and was located symmetrically in the median line. Per vaginam the cervix was slightly flattened. The sound passed 3½ inches. The mass was one with the uterus above and was found to fill the pelvis like a child's head. Behind the cervix two lumps were felt which were tender and somewhat yielding, and these were taken to be the ovaries and tubes. The patient had been under treatment for twelve months, she said, before she came to me, and, as she was getting weaker and the tumour larger, there seemed every chance that the effect of the menopause, which is so confidently spoken of, would arrive too late.

I therefore determined to explore the uterine cavity and make sure of the absence of a polyp or submucous myoma, the removal of which would perhaps have cured the hæmorrhage for a time or for good. If nothing intra-uterine were found I intended at a subsequent operation to proceed to explore abdominally and, if possible, remove the appendages, or if a pedicle could be obtained, proceed to hysterectomy. Of myomectomy or enucleation I did not think that there would be any likelihood.

The patient was therefore anæsthetised; and, after dilating the os with Hegar's dilators, I explored the uterine cavity, and found the endometrium soft and spongy, but nothing projected into or was prominent in the cavity. The endometrium was curetted, a 50 per cent. solution of zinc chloride was applied, and a strip of iodoform gauze inserted. This operation enabled a more complete examination to be made; and the size and site of the tumour were determined and its fixity estimated. From there it seemed to me that the appendages might be just attainable; or that, perhaps, after dividing the broad ligaments, I might obtain a pedicle for the clamp.

The second operation was undertaken a week after the first; and the patient had been in a very nervous state, and took her food but moderately. Perhaps the patient would have picked up after the curetting had she gone home for a month; but, on the other hand, it seemed to me that, so far as the uterus itself was concerned, no time could be better than after a free curetting and drainage of the uterine cavity, when the uterine congestion would be at its lowest point. The operation was as follows:—

After dividing the parietes I came upon the tumour, which presented the appearance more of a dense walled broad ligament cyst. Repeated attempts were made to deliver the tumour from the pelvic cavity by pulling with several volsellas, which were held by the assistant, and by using one hand in the vagina and one upon the mass. They were in vain, since the tumour spread extensively into the broad ligaments, and its base was so thick as to render any use of the clamp impossible. It was equally impossible to get at the appendages, since the fingers could not be passed between the tumour and the pelvic wall to a sufficient length even to feel the ovaries, which were lying at the bottom of Douglas's pouch. Finding these attempts of no use, I was about to close the abdomen and leave the case to nature, which would have been perhaps more advisable, when it was noticed that there was a distinct capsule to the myoma. This led me to do Martin's operation of enucleation. He begins by temporarily clamping the uterus with an elastic ligature. This was absolutely impossible in the present case. I made an incision beginning above the bladder, which lay on the anterior wall of the tumour, and running in the middle line for about five or six inches. The myoma was then gradually enucleated, and bleeding vessels seized with forceps. Considerable portions of the muscular wall and the fibrous capsule were removed in trimming. This still left a large cavity, which did not, however, open into the uterine cavity. I filled this cavity with strips of iodoform gauze, and sutured it with deep and superficial interrupted sutures, but leaving the lower angle of the uterine wound open for the ends of the strips of gauze. The incision in the uterus was now sutured to the abdominal incision exactly as in performing ventro-fixation, except for the greater extent and for the gauze strips, which were left near the lower angle of the abdominal incision, having two abdominal sutures below them. The abdominal cavity had been carefully sponged out, and, in fact, there had been comparatively little bleeding. Gamgee's tissue was used as a dressing, and a binder put on.

It is perhaps better to remark here that there was but little tension upon the abdominal parietes, and that, if one may be allowed to say so, I felt very pleased with the general result of the operation, but not with its duration—two hours.

Her temperature and pulse before operation, at 8 a.m. were 98·2 and 110 respectively. On the eve of the operation they were 99·4 and 116. She was surrounded by hot water bottles after the operation, her temperature and pulse being 97 and 140. A warm normal saline enema containing an ounce of brandy and an ounce of beef tea was given at once, *i. e.*, at 11 a.m. and at 2 and 7 p.m. At 2.45 p.m. a hypodermic injection of a sixth of a grain of morphia and one hundred-and-twentieth grain of atropia was given. She slept four hours. Nutrient enemata were given at 12.40 a.m. and at 6.0 a.m. She was sick at 2.30 a.m. Temperature and pulse were on first day. 2 p.m., 96·4 and 128; 6 p.m. 98 and 134; 10 p.m., 99 and 132: second day, 2 a.m., 98 and 124; 6 a.m., 98·4 and 126. She was in great pain, and a morphia suppository was given at 7.30 a.m. Because of her collapsed state she was allowed to drink champagne at 7.0 am. At 8 a.m., temperature 96, pulse 150. She died at 9 a.m., that is twenty-three hours after the operation. There was no hæmorrhage through the iodoform gauze drain

There was no *post mortem* made, which I regret exceedingly, because there is always the possibility of secondary hæmorrhage having been the cause of the fatal issue. This in my opinion is extremely improbable, because the whole uterine incision was brought firmly into apposition and then again fixed against the ventral incision in its full length, and this was done at the operation with the full view of forcing any bleeding to come through the abdominal incision since there was no drainage of the peritoneal cavity.

The long duration of the operation, combined with her cardiac and visceral degenerations (not physically found by myself, but proved to be present in all cases of long-continued repeated bleeding), brought her resisting and recuperative powers too low for anything more than a momentary reaction.

There was a great remedy untried, and that was saline infusion, by means of an aspirator reversed, between the scapulæ. I should have used this had she not seemed to react to the rectal infusions. Her death was sudden, and I think due to syncope after shock.

After writing the previous words, I have come to the conclusion that the patient died of failure of the vasomotor system to keep up the blood-pressure sufficiently for the heart to act—*i.e.*, the syncope was due to a kind of intra-vascular bleeding. No doubt that six pints of saline solution infused into the circulation through a vein would have been a very advisable and perhaps saving procedure.

It is not often that one meets with a case which has progressed to the stage in which this myoma was—*i.e.*, that the appendages are absolutely not to be touched by the fingers in the abdomen even with the aid of vaginal manipulation; or else castration was the treatment, had the case come earlier under my care. What should I do if the same case occurred again? It is worth consideration whether some of the cases, in which the operation of castration cannot be performed from above, would not allow of castration through the posterior vaginal fornix. The great difficulties are the adhesion of the appendages, that they are often not in the pouch of Douglas, and that, as in this case, the cervix could not be drawn down to the vulval level. With a tumour so large, vaginal hysterectomy is out of the field. Total abdominal hysterectomy would have been an operation of extreme difficulty, owing to the situation of the tumour and the way it involved the broad ligaments. It could have been performed only by Péan's methods of morcellement and working from within the uterine mass. Under the same conditions, therefore, I should perform the same operation, but should hope to finish it in sixty to ninety minutes, or perhaps less; and I should not waste time in trying to stop uterine oozing from the cut surfaces and the stitch-holes, but should go on as rapidly as possible. There was an excessively large cavity left after enucleation, even after trimming down its margins; and for this there appears to be nothing better than the iodoform gauze, which could be drawn out afterwards. This might leave a large cavity in the uterus, but no doubt shrinking of the uterus and the growth of granulation tissue would soon obliterate the cavity.

The mortality of enucleation of myomata from the uterus is 25 per cent. Martin had three deaths in his first five cases and none in his last eleven cases. It is a conservative operation leaving the woman unmutilated. The manipulative difficulties are those of suturing uterine tissue and closing the gap left after removal of the tumour.

The colour of the tumour was that of myoma, its encapsulation was more like fibromyoma. "It was a pale flesh-coloured tumour having a soft consistence, and single," but not "passing gradually into the surrounding uterine wall." (Hart and Barbour, p. 403).

TWO CASES OF RETENTION OF THE PRODUCTS OF CONCEPTION BEYOND THE NATURAL TERM OF DELIVERY.

BY THOMAS WILSON, M.D., B.S. LOND., F.R.C.S. ENG.
ASSISTANT OBSTETRIC OFFICER TO THE GENERAL HOSPITAL, BIRMINGHAM.

Prolonged Gestation; Transverse Presentation; Version and Delivery of a macerated full-term Fœtus 318 days after conception. Fœtal retention beyond the natural term of delivery is as a rule due to extra-uterine pregnancy, or to the existence of some obstacle to delivery in the cervix, such as carcinoma. In most cases the symptoms of labour come on at the usual time and gradually die away, the fœtus perishing at the same time. The following patient gave no history of an abortive attempt at labour, nor of the fœtal movements having ceased to be felt at any particular time. The contracted pelvis appears to have been the cause, or an essential part of the cause, of the protracted retention.

Mrs. H., aged 39, was seen on July 31st, 1893, when she gave the history of having had labour pains for about four days; the pains had been fairly frequent for thirty hours, and seven or eight hours before the visit something had protruded at the vulva, which had afterwards burst and allowed a discharge of a dirty blood-stained fluid. Mrs. H. was a tall bony woman, with broad hips, and the present was her third pregnancy. The first labour was difficult and prolonged, and ended in the birth of a boy, still-born; the second, also very prolonged, ended in the birth of a girl, now living, and eight years old. The last monthly period occurred at the beginning of September, 1892, and the labour was calculated by herself and her usual medical attendant to be due in May; the exact date in September on which the patient was poorly could not be given, but she was certain it was in the beginning of that month. Taking the sixteenth as the date, this would give the duration of pregnancy from the last day of the last period as 318 days, or at least a month over the usual average time. At my visit the abdomen was found to be extremely prominent and overhanging the pubes; along a transverse line about the level of the umbilicus several small prominences could be felt—the fœtal limbs; the long axis of the uterus was nearly transverse. On vaginal examination the cervix was dilated to a size large enough to admit three fingers, the cervical cavity was long; the broken edges of the membranes were felt, and as high as it was possible to reach the right shoulder was felt presenting, the fœtus being in the abdomino-anterior position with the head in the right iliac fossa. No fœtal heart could be heard, and from this fact, and the blood-stained liquor amnii which had been discharged, it was concluded that the fœtus was dead. The woman's condition was good, although she complained of some fatigue. It was thought best to administer chloroform before attempting delivery, and while assistance was being sought to give the anæsthetic, the pains continued at intervals of ten minutes or so, and the right hand of the fœtus prolapsed, confirming by its position the diagnosis previously made of the presentation.

Chloroform having been administered, and the patient being in the left lateral position, the left hand was introduced, the cervix easily dilated to admit it, and the lower, right, knee was seized; the pelvic brim seemed to be generally contracted. With a little difficulty the knee was brought down into the vagina, and the foot delivered. On traction the right hip came under the pubic arch, and after a fairly strong pull the breech, left leg, and body were delivered; the arms remained above the brim, but were easily delivered in the usual manner, the anterior first. On further drawing the breech forward to deliver the head, no very great force being used, there was a sudden alarming sensation as if all the joints in the fœtal body had simultaneously given way; traction was therefore given up; expression and jaw traction then completed the delivery of the head. Thirty minims of extract of ergot were injected deeply into the buttock and the hand kept on the fundus. At about the third contraction the membranes and placenta were expressed, not quite entire, a few pieces having broken away from the surface of the placenta; the membranes had a peculiar heavy, offensive odour. The fœtus was of large size, above the average at full term, and macerated. Two pints of 1 in 2000 corrosive sublimate solution were injected into the uterus. The patient made a perfectly afebrile recovery. The measurements of the pelvis were as follow:—True conjugate diameter 3¾ inches; Dist. Sp. Il. 10 inches (25 cm.); Dist. Cr. Il. 12¾ inches (32 cm).

Fleshy Mole retained in utero until thirteen months after conception; mimicry of normal pregnancy.—Cases of fleshy mole in which the expulsion does not take place until after the natural term of pregnancy are not very common. In the following case death of the fœtus, and probably its expulsion, took place at the third month of pregnancy, as proved by the mother's statements, by the observation of the symptoms of abortion with the uterus at the size usual at the third month of gestation, and, finally, by the expulsion of a three months' placenta infiltrated with blood nine months and a half later. The imitation of the continuance of normal pregnancy after the formation of the mole until near term is an interesting feature in the case, and one I do not remember to have seen mentioned in any previous similar case.

Mrs. S. D., æt. 32, was seen on the 21st of July, 1892, complaining of much loss of blood per vaginam for the preceding four days. The bleeding occurred in gushes, and there was no loss in the intervals. There were no pains. The patient stated that she was three months advanced in her second pregnancy, the first having ended in a tedious labour terminated by forceps two years and a half previously. On examination, the uterus was found to be enlarged to about the size of the third month of pregnancy, and the os not dilated. Rest in bed, and a mixture containing ergot were ordered, and five days later there had been no further loss of blood and no pains. Nothing but blood was stated to have been passed.

A month later, no further symptom having occurred, it was concluded, without further examination, that the pregnancy would probably go on, and that labour might be expected in the last week of January, 1893. The patient went on increasing in size until the beginning of January, when she was seen by me in the street. At this time she had the appearance of being near the full term of pregnancy, and stated that she had felt something like the fœtal movements in the preceding August, a month after the bleeding, but since then only something "like wind moving." The breasts had enlarged; there had been no vaginal discharge of any kind since the bleeding in July.

Mrs. D. was next seen on May 4th, 1893, when she stated that the abdomen had gradually become smaller since January. There had been no bleeding or other discharge until three weeks before, when a small loss of dirty watery fluid began, and has continued, becoming a little fresher in colour in the last few days. The breasts were now well developed, but the patient stated that there had not been any secretion. The uterus was found to be about the same size as when last examined in July, 1892; the os was patulous. Rest and ergot were again ordered, and continued until the 11th of May, when the patient was removed to hospital to have the uterus emptied of its contents. On the morning of the 13th the patient had strong bearing down pains lasting two hours and a half—the first pains which had occurred since the pregnancy began. Later in the day, under ether, an ovoid lump was removed from the vagina, into which it had been expelled by the pains. There was not the slightest trace of decomposition. The finger easily passed as far as the fundus, the uterine walls feeling flabby like wet leather, and not contracting. One or two rough places were felt on the inner surface, and were scraped away by the finger nail, the interior of the organ being then swabbed with glycerine and carbolic acid (equal parts) and the vagina well douched. There was a little bloody discharge for three days. The patient was discharged well on June 4th, has continued well since, and was delivered of a healthy child in September, 1894.

The ovoid lump was found, on examination, to consist of a placenta and membranes of about the third month, compressed, the amniotic cavity containing numerous laminated rusty blood clots. No trace of a fœtus could be observed. The villi appeared more opaque and striated and decidedly less vascular than usual. There were numerous hæmorrhages in the maternal portion.

MULTIPLE HEPATIC ABSCESS (PYÆMIC).

BY E. N. NASON, M.B., NUNEATON.

A. B., who first came under my care in the middle of September, 1891, gave the following history:—

For some eighteen months past he had suffered from a feeling of nausea after food, or on stooping, and could not bear any pressure over the epigastrium (as from tight garments), but had not actually vomited. Except for this, he had had no illness until June, 1891, when he had a bad attack of "influenza," (?) and was laid up for fourteen days. At the end of this time, though he still felt very ill, he was advised to get up and go out. He at once had what he called a "relapse," accompanied by a feeling of chilliness (? rigor), and followed by marked jaundice, and high temperature. He says he was treated for typhoid, but he apparently had no bowel symptoms, and nothing particularly pointing to that condition.

He had a diffuse pinky brown rash all over the body, lasting about a week, and soon after began to have repeated rigors and to lose strength and flesh. The jaundice, though less marked, persisted, and, in addition, a most troublesome hiccough began, and, with the before-mentioned symptoms, continued until he came under my care on September 20th.

His condition at that time was as follows:—There was much emaciation, while the complexion was earthy with a slight icteric tinge. The urine contained bile, but no albumen or sugar. The motions were of putty-like colour and consistence. He was suffering from persistent hiccough, which had lasted for more than a week, and was at times so severe and distressing that the diaphragm seemed almost tetanised, and respiration was much interfered with. There was no general abdominal tenderness or distension, but there was marked fulness just beneath the ribs and considerable tenderness also, chiefly on the left side and in the epigastrium. The superficial abdominal veins were more evident than natural, especially on the right side. The liver dulness was little if at all increased, but there was considerable increase of dulness over the splenic area. No tumour could be felt, but pressure near the epigastrium increased the hiccough and caused much pain. There was slight œdema of both legs, and a suspicion of fluid in the flanks. Loud friction sounds could be heard along the upper edge of the liver, and reaching from the middle line to a little short of the axillary line. The right chest was dull posteriorly as high as the angle of the scapula, and the left for about two inches from the base of the lung. The physical signs were those of fluid. The breath-sounds elsewhere were healthy. The heart-sounds were natural, the pulse rapid and very small, the tongue furred and dry, and the breath had the peculiar odour of "sawn bone." The temperature was irregularly high, and there were repeated rigors. Asthenia was most marked. The symptoms seemed to point to either sub-diaphragmatic or hepatic abscess. The patient, however, would not consent to an exploratory operation.

The next morning the right chest was aspirated, and fifty ounces of clear fluid removed. The hiccough was at once relieved, but the pulse rose to 180 per minute and became alarmingly feeble. However, with the aid of stimulants, this condition passed off, and the next day the patient was much more comfortable. After a short interval the temperature again began to rise, rigors returned, and fluid again began to collect in the right chest. Towards the end of October seventy ounces of fluid were withdrawn from the right chest, with the result that the temperature became subnormal for four days. The hiccough, however, returned and was again most distressing, and the rigors again recurred at intervals. The friction-sounds heard over the region of the liver became more marked than ever, as also did the tenderness beneath the ribs. The condition otherwise remained practically unaltered until Nov. 5th, when suddenly acute general peritonitis supervened, and death occurred the following day.

A partial *post mortem* only was allowed, and showed early acute general peritonitis with intense peri-hepatitis and peri-splenitis with old and recent adhesions. The tissues at the back of the stomach were all matted together, but could be to some extent separated. The whole surface of the liver was studded with small abscesses, the largest containing about a drachm of greenish pus. They were evidently of pyæmic origin. The spleen was a good deal enlarged, and showed patches of lymph upon its surface. The kidneys were pale and small, but otherwise natural. There were no adhesions in the pleuræ, but the right lung was collapsed and compressed towards the spine from base to apex.

SARCOMA OF LOWER END OF FEMUR.

BY E. N. NASON, M.B., NUNEATON.

S. B., widow of the patient mentioned above, noticed in the following January (1892) that her left knee "failed her" occasionally when walking. A month later I examined the knee and found very slight synovial thickening and a small quantity of fluid in the joint. There was little or no pain, and I thought that the nursing of her husband through his long illness, which had necessitated much going up and down stairs, might be answerable for the condition, and ordered rest and the support of a bandage. The knee however did not improve under this treatment, and there seemed some slight increase in the lower end of the femur. I sent the patient to the General Hospital, Birmingham, where she was admitted, and the diagnosis made of chronic rheumatic arthritis. She remained an in-patient for some few weeks and had the knee blistered, but on her return was no better. She complained that the knee was becoming more painful, and it certainly had increased in size.

Soon after this the superficial veins began to be unduly evident and the lower end of the femur to increase more rapidly, so that I was led to suspect sarcoma. The temperature too began to rise and the patient to rather rapidly lose flesh. On examining the chest nothing abnormal was found, but an examination of the abdomen revealed two rounded, smooth, elastic tumours, one in either hypochondrium, deeply seated, but freely movable, of the existence of which the patient was quite unaware. The knee continued to enlarge (reaching 21 inches in circumference) as did also the abdominal growths, and the patient rapidly sank and died on November 18th, about ten months from the commencement of symptoms.

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

A meeting of this Branch was held on Thursday, Feb. 14th, 1895, the President, Mr. H. LANGLEY BROWNE, in the chair. Present, thirty other members.

The following were elected members of the Branch:—A. Arkwright, M.B. (Halesowen), William R. Reith, M.A., M.B. (Aston Infirmary), W. Richardson Rice, B.A., M.D. (Coventry), W. S. Robinson, L.R.C.P. Ed. (King's Heath), Robert Shiels, M.D. (Cape Hill, Birmingham), T. M. Tibbetts, M.B. (Cradley Heath), Swale Vincent, M.B. (Mason College).

Mr. Barling showed a girl upon whom he had operated for an appendical abscess opening into the bladder. The abscess was drained by incision through the abdomen, the appendix not being removed, and the patient is now quite well.

Mr. John W. Taylor showed the fœtus, placenta, and remains of the right Fallopian tube, which he had removed by operation two weeks previously from a case of ectopic gestation of three months' duration. This had been correctly diagnosed by Dr. Latimer Greene, of Stafford, previous to operation. The patient is doing well.

Mr. Jordan Lloyd showed a right kidney, weighing 2 lbs. 12 oz., successfully removed from a boy 8 years old, by combined abdominal and lumbar operation. His mother's attention was first called to the swelling through his complaining of pain, less than two weeks before coming under observation. The tumour filled the right lumbar, hypochondriac, and epigastric regions, and his temperature was raised. A few days after admission deep incision in the loin opened a cavity containing about 15 oz. of thick sweet pus; but, as the mass did not subside, some three months later the swelling was explored from the abdomen, found to be a renal tumour, and removed. The growth sprang from the hilum of the kidney, and consists of multiple cysts exactly resembling the congenital cystic hygroma met with in the neck and other parts of children. The pelvis was in front of the tumour, and the kidney was spread out and flattened on its outer surface.

Renal Calculus.—Mr. F. Marsh showed a calculus, weighing 123 grs., which he had removed by lumbar nephrotomy from the right ureteral orifice in a case of hydro-nephrosis. The patient, a woman of 50, had had symptoms of renal calculus for eight years, with intermittent attacks of hydro-nephrosis. Nephrotomy was preferred to nephrectomy because it was probable the obstructing calculus could be removed, and there were evidences of calculus in the other kidney. The patient was making a good recovery.

Mr. Bennett May read a paper on a case of pancreatic cyst treated by operation.

Dr. Carter read notes on the sterilisation of milk, and demonstrated a new sterilising apparatus.

PATHOLOGICAL AND CLINICAL SECTION.

The fourth meeting of the Session was held on February 22nd, 1895, the Chairman, Dr. MALINS, presiding.

Melanotic Sarcoma.—Dr. Carter showed a specimen of melanotic sarcoma of the pleura.

Cirrhosis of Liver.—Dr. Foxwell showed a multilobular cirrhotic liver weighing 5¾ lbs. taken from the body of a gentleman who had been a chronic drinker to excess of various forms of alcohol for a great number of years.

Ulcer of Stomach.—He also exhibited the stomach of a man of 74 which had a perforation the size of a threepenny-bit on the posterior surface of the smaller curvature near the pylorus. There was no evidence of recent ulceration, the walls of the ulcer being very smooth and fibrous, and greatly thickened; the floor had evidently been formed by the peritoneum alone. Death occurred within forty-eight hours. There was general purulent peritonitis.

Specimens.—Dr. Douglas Stanley showed a specimen of an aneurism of the right posterior aortic cusp. It was the size of a large pea, and bulged downwards and towards the lumen of the vessel.

Mr. Albert Lucas showed a specimen of a cured Aneurism of the common Femoral Artery. The patient was a feeble old man aged 58, who died of bronchitis and heart failure 101 days after ligature of the external iliac artery. Ballance and Edmunds' "stay knot" was used, and the material being stout catgut, no trace of the ligature could be found. The artery about the seat of ligation being converted into a firm fibrous cord. The aneurismal sac was filled with a firm laminated clot.

Dr. Kauffmann showed a specimen of Cancer of the Ovary, secondary to cancer of the rectum which had also caused secondary deposits in the liver. The disease occurred in an elderly woman whose uterus was the seat of multiple fibromyomas, one of which was very soft. The total mass in the upper part of the pelvis had blocked the sigmoid flexure and had produced complete obstruction of the gut On the way to the hospital the patient's great intestine was ruptured, and she died of fæcal extravasation.

MIDLAND MEDICAL SOCIETY.

The fifth ordinary meeting of the Society was held on Wednesday evening, February 6th, the President, Mr. T. F. CHAVASSE, being in the chair.

Mr. Astley Prosser showed a patient with a number of growths in the subcutaneous tissue of both arms and thighs. The tumours which had been noticed for nine years were multiple, sessile, and varied in size from a pea to a small orange. The larger masses were tender and showed some signs of inflammation. The growths were probably myxofibromata or fibro-lipomata.

Rupture of Inner Coat of Femoral Artery. — Mr. Haslam showed a man aged 36, the upper part of whose left thigh had been crushed by the passage over it of the wheels of a railway delivery waggon. On admission, the upper part of the thigh was bruised, and there was a broad depression seen crossing the limb from just below the attachments of the adductor muscles to the pelvis, passing across the thigh below and parallel to Poupart's ligament, and just missing the anterior superior iliac spine. There was no fracture of bone, but no pulsation could be felt in the femoral artery or in the posterior tibial; the limb was cold and pale. The limb was elevated and kept warm, the collateral circulation proving equal to maintaining its vitality. There was never any sign of impeded venous return, nor was there any amount of extravasated blood at the seat of injury, and to these two facts the successful issue of the case is to be largely attributed. The diagnosis was a rupture of the inner and middle coats of the common femoral artery. The patient is now well and able to work, and a feeble pulsation can be felt in the posterior tibial artery. The accident occurred eleven months ago.

Relapsed Talipes.—Mr. E. Luke Freer showed a patient 13 years of age, with double congenital talipes varus and pes cavus. The boy had been operated on when a year old, at which time there was considerable equinus. This had been cured, but owing to neglect of after treatment the varus had relapsed. The only operation now performed consisted of free subcutaneous division of the plantar fasciæ, with daily manipulations and massage. The boy now had both feet perfectly natural in their arches and no inversion Mr. Freer instanced this case as showing how easily by orthopædic measures some of these apparently most severe relapsed cases of club foot can be rectified.

Compound Depressed Fracture of Skull with Paralysis of Right Arm and Leg, Left Side of Face, Aphasia and Paralysis of Soft Palate. Recovery.—Mr. Barling showed a boy, aged 11, who was admitted to the Birmingham General Hospital, April 14, 1894, with a very extensive compound depressed fracture of the right side of the head. He was deeply unconscious and was operated on without an anæsthetic, an area of depressed bone about 2½ inches square being removed from the right side. From this, a fracture ran horizontally round the forehead and was lost in the bone of the left side of the head. A large quantity of blood was liberated by stripping the dura mater from the bone of the vault of the skull. The next day it was discovered that the right arm and leg were paralysed, and to some extent the left side of the face. The boy was still unconscious and remained so for eleven days, during which time he had to be fed with a nose tube.

On the 21st day he noticed things going on round him, shook hands when asked to do so, but with his left hand. He was unable to speak or to produce any sound except a grunt, and could not protrude his tongue. He could understand written and spoken words and could write with his left hand. The left side of the face was still inactive, but the right arm and leg were much better. On the 34th day he spoke for the first time, saying orange, yes, no, and his name very indistinctly, and with a nasal twang, and it was then discovered that his soft palate was paralysed on both sides.

There was now steady improvement of the paralysed parts all round, and he was discharged eight weeks after the injury practically well. The wound healed by first intention and gave no trouble at all.

At the present time the boy is emotional and easily irritated, but the only distinct remnant of his various paralyses is a slightly nasal voice.

Post-Febrile Peripheral Paralysis.—Dr. Carter showed a man, aged 29, with complete paralysis and atrophy of the deltoid supra- and infra-spinatus muscles of the left shoulder. Four years ago he sustained some injury of that shoulder and adjacent part of neck from a fall, and up to an attack of small-pox last year, the limb had not been so strong as before the injury, but no marked wasting was observed. On his recovery from the attack of small-pox, which was very severe, he found that he had lost the power of raising his left arm. Neither of the above-mentioned muscles re-act either to Faradism or galvanism. Dr. Carter considered that the lesion was in the left anterior cornu of the cervical cord ; and though directly due to the influence of small-pox, might possibly have some remote connection with the injury of four years ago.

Dr. Carter also showed a case of persistent brachialgia, in a man of 60 years of age, supervening on an injury to and amputation of the third finger upwards of a year ago.

Dr. Douglas Stanley then read a paper on an "Unusual Form of Anæmia." The subject of the paper is that form of disease frequently called Splenic Anæmia—a term which is likely to cause confusion. The cases are characterised by marked reduction in the number of red blood corpuscles, the white being unaltered or else reduced. There are frequently poikilocytes and even poikiloblasts present. The hæmoglobin is also reduced. The spleen is greatly increased in size, and the liver is frequently enlarged. There is no affection of the lymph glands. Marked asthenia, passing into marasmus, is observed, and in some cases there is pigmentation of the skin which may occur in local patches, sometimes in a more diffused form over the abdomen.

The duration of the disease may extend over many years, and during its course there are acute attacks during which the patient is greatly prostrated, may become of a yellow olive colour, and the temperature may rise to 105° F., but showing great variation. During such an attack the urine becomes of a dark brown-red colour, and is found to contain large quantities of pathological urobilin. There is also a rapid fall in the number of red blood corpuscles, and the spleen may increase in size. There may be epistaxis, severe vomiting, and diarrhœa. When such an attack passes off, there is a slow restoration to the former condition. The pathological basis seems to consist in severe hæmolysis, probably due to the absorption of toxic products from the intestine. *Post mortem*, sclerosis of the spleen and pancreas was found, with marked changes (fibrous, cystic, etc.) in the supra-renals; the liver showed great pigmentation of the cells. The prognosis is always bad, although the duration may be long.

The treatment which has done most good seems to be intestinal antisepsis. Extract of supra-renals (freshly prepared) produced a marked increase in the number of red corpuscles.

REVIEWS.

THE EDINBURGH HOSPITAL REPORTS.*

THE second volume of these Reports in every way equals the first, and is a valuable collection of papers on Medicine, Surgery, and the allied subjects. The first article is on "The Edinburgh Royal Infirmary in the 'Fifties,'" and it is only necessary to say that the author is Prof. W. T. Gairdner, for it to claim careful reading. It is full of memories and anecdotes of some of the most noteworthy men in the profession of medicine, and who have filled the foremost places, not only in their University, but in the scientific world.

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* The Edinburgh Hospital Reports, Vol. ii. London and Edinburgh: Young J. Pentland.

Of the many and varied articles it is impossible to speak in detail. Dr. John Wyllie contributes a valuable paper on The Diagnostic Value of Patterns of Abdominal Tumidity. After describing the more common variations in the appearance of the abdomen in cases of intestinal obstruction, the author points out the fact that in many cases of chronic obstruction the whole intestine above the obstruction may from time to time exhibit variable peristaltic movement and stand up for half a minute in rigid spasm. When this occurs it is comparatively easy for the physician to determine where exactly the obstruction is situated, and the sign is one which should be carefully watched for.

Dr. Muirhead, in an article on Enteric Fever, strongly advocates the use of intestinal antisepsis in the treatment of that disease. He gives the preference to Benzonaphthol in sixteen-grain doses every four hours. If the patient is seen in the early stages, calomel in a five-grain dose may be given, "which may be repeated the next day, even if the bowels have acted rather sharply the first day." In the case of hospital patients we must be more cautious, for there is less guide as to what the stage of the disease may be. The author states that, in Edinburgh at any rate, constipation is the rule, diarrhœa the exception in Enteric.

There is an interesting article by Dr. Murray Leslie on a case of great enlargement of the spleen and liver with diminution of leucocytes, and to which he applies the term Oligo-Leucocythæmia. There is an account of the bulbar lesions in a case of Graves' disease, by Sir Thomas Grainger Stewart and Dr. G. A. Gibson. In the floor of the fourth ventricle a hæmorrhage was present. This seemed to have caused compression of the underlying nervous structures, and in these a large number of colloid bodies was found. The probable explanation is that these bodies take origin in a segmentation of the myelin sheath. No part of the sympathetic system showed any lesion.

In the present volume is one of the most complete accounts yet published of actinomycosis as occurring in man. The author, Dr. R. F. C. Leith, gives a very clear summary of the various views as to whether the clubs are organs of fructification or involution forms indicative of a degenerative process. The paper is beautifully illustrated. The same author has a paper on acute perforating ulcer of the stomach, which contains the result of very careful observations. There are several papers on neurological subjects which it is impossible to summarise here, but among which are "A Case of Nervous Disease," by Professor Grainger Stewart; Syringomyelia, by Mr. Alexis Thompson; Muscular Atrophy, by Dr. A. W. Stalker.

There are several interesting and important surgical papers, including "Electrolysis of Vascular Tumours," by Mr. Duncan; "Excision of the Sigmoid Flexure for Carcinoma," by Mr. James Hodsdon; and "Internal Derangement of the Knee Joint," by Mr. A. Logan Turner.

The present volume shows evidence of very careful editorial skill, and is a valuable addition to medical literature.

SPINAL CURVATURE AND AWKWARD DEPORTMENT.*

THE ninety pages of this little book are written in a "popular tone for the clearer comprehension of a wide circle of readers," inasmuch as the "physician is powerless to do much . . . without the co-operation of two powerful allies—the parent and the teacher." We have read the volume with pleasure. It is clearly and concisely written, and in the hands of any intelligent person having to do with the management and education of children, will doubtless prove of value.

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* Spinal Curvature and Awkward Deportment: their Causes and Prevention in Children. By Dr. George Müller, Professor of Medicine and Orthopædics, Berlin. English edition, edited and adapted by Richard Greene, F.R.C.P. Edin. Illustrated. London: The Scientific Press Lim. 1894.

The "causes of spinal abnormality" and the means by which it may be prevented are carefully and fully considered; and in illustration of the author's "thoroughness," we quote a few lines on "the hygienic consideration of the head covering." He says: "It should be light, and worn exactly on the middle of the head; for if the hat be heavier on the one side than the other, the head will incline to the heavier side, and will thus be in a position to favour a curvature of the cervical part of the spinal column!" Even before the "hat-wearing" period of a child's life is reached, we are told that attention must be given to the spine; and some of the author's instructions strike us as so amusing that we cannot refrain from quoting them. A daily bath of a precise temperature should be given during the early months of life, and "after the child is six months old, its back should be treated with cold massage. From nine months to one year, the back may be rubbed with a weak cold mixture of French brandy and water. After the fourth month, to make the bath more invigorating, an infusion of field cummin, sweet flag, and camomile may be used, producing an aromatic bath. From the sixth to the seventh month Strassfurt salt may be used, beginning with half a pound to a bath and increasing gradually till (when the child has reached its second year) three pounds may go to a bath!" Specialistic eccentricities of this kind do more harm than good in a work like this, as they tend to shake one's faith in an author's practical personal experience.

The second part of the book is devoted to the consideration of "special exercises for deportment at important periods of development," and will be found of real service. The volume is carefully illustrated, and in such manner as to make the leading points of the subject clear and intelligible.

PULSE-GAUGING.*

The object of this monograph is to bring before the notice of the profession two instruments invented and used by their author for the purpose of gauging the calibre of the superficial arteries, and the tension or pressure of the pulse; and to record a very large number of observations made by their means. The value of the book is probably more scientific than clinical; for we cannot help doubting whether it can ever be worth while, as Dr. Oliver seems to think it may, to employ these instruments as practical aids in the diagnosis and treatment of disease. The facts elicited by the former instrument—the Arteriometer—are quite new, and Dr. Oliver appears to have definitely shown that certain variations in the calibre of the arteries normally accompany alterations in posture or external temperature, physical exercise, and the process of digestion; whilst failure in these physiological variations is known to occur in certain diseases, including chronic Bright's disease, myxœdema, and gout.

By means of the Pulse-Pressure Gauge various important facts with regard to the condition of the circulatory system can, so Dr. Oliver maintains, be ascertained—namely, "the mode and duration of the ventricular contraction, the amount of out-put, the condition of the arterial wall as to contraction or relaxation, the quantity of blood present in the arteries, and the degree of peripheral freedom or resistance." Some of these facts are of course already demonstrable by means of the sphygmograph; but the author shows good reason for believing that his instrument, whilst far more reliable, is also more delicate, and capable of giving much more extended information than can be gained from any other instrument at present in use.

The book is obviously the outcome of much laborious and accurate work; and no one can fail to be struck with the completeness of Dr. Oliver's investigations. Both the instruments and the author's observations with their aid will prove of great value to those who are engaged in the scientific investigation of the phenomena of the pulse.

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* **Pulse-Gauging; A Clinical Study of Radical Measurement and Pulse-Pressure. By George Oliver, M.D. Lond., F.R.C.P. London: H. K. Lewis. 1895.**

New Books, etc., Received.

Abdominal Tumours and Abdominal Dropsy in Women. By JAMES OLIVER, M.D., F.R.S. Edin., Physician to the Hospital for Women, London. London: J. and A. Churchill. 1895.

King's College Hospital Reports. Edited by Messrs. TIRARD, M.D.; WATSON CHEYNE, F.R.S.; JOHN PHILLIPS, M.D.; and W. D. HALLIBURTON, F.R.S. Vol. I., October 1st, 1893, to September 30th, 1894. London: Adlard and Son. 1895.

Text-Book of Diseases of the Kidneys and Urinary Organs. By Professor Dr. PAUL FURBRINGER, of Berlin. Translated from the German, with annotations, by W. H. GILBERT, M.D., Physician in Baden-Baden, etc.; in two volumes. Vol I. London: H. K. Lewis. 1895.

Manual for the Church Lads' Brigade Medical Staff Corps. The Church Lads' Brigade. London. 1895.

The General Hospital, Birmingham. 115th Annual Report. 1894.

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THE
BIRMINGHAM MEDICAL REVIEW.
MAY, 1895.

ORIGINAL COMMUNICATIONS.

THE SERUM TREATMENT OF DIPHTHERIA AND TETANUS.*

BY GERMAN SIMS WOODHEAD, M.D., F.R.S.E.
DIRECTOR OF THE LABORATORIES OF THE ROYAL COLLEGES OF PHYSICIANS (LOND.) AND SURGEONS (ENG.).

Mr. President and Gentlemen,

When I received your very kind invitation to give a paper before your Medical Society, with which are associated so many distinguished names, and whose traditions are worthily maintained by equally distinguished men, I, in the midst of somewhat exacting and sustained work, almost felt a desire to shirk a task which I knew must prove a difficult one; but a sense of the honour you had done me very quickly bore down any reluctance I might feel, and I now come to place before you the result of a somewhat prolonged and, I hope, careful study of the question of serum therapy; first, as gathered from the works of others, and secondly, as controlled by a number of observations of my own. To some of you I may have nothing new to tell; these must accept my statements as a corroboration of those they have already seen, from the fact that I have arrived at my conclusions, incomplete as they are, only after a careful sifting of facts and the performance of numerous experiments, by which I hoped to fill in certain gaps, or to add or confirm some detail.

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* A Paper read at the meeting of the Midland Medical Society on April 3rd, 1895.

Some years ago, my colleague (Dr. Cartwright Wood) and I published a note on the antidotal and summative actions that the products of bacteria exert on the course of infective disease; whilst later, we contributed an article on bacterial therapeutics to the third volume of the laboratory reports issued by the Royal College of Physicians of Edinburgh. We there gave, as the result of our experiments, our conviction that a temporary immunity could be brought about, under certain conditions, by the inter-action of the products of two microbes, the blue pus bacillus and the anthrax bacillus. These, exerting their action through the cells of the animal, become antidotal to one another, the blue pus products appearing to antagonise the specific toxine of the anthrax bacillus, the latter being deprived of the weapon by means of which it held in check the germicidal action of the tissues, and falling a victim to the cells just as does an ordinary saprophyte. But we indicated that the tolerance to the poison was brought about through a change in the protoplasm of the cells, by virtue of which these cells had become more resistant to the poison. The antidotal action of the substance in this case, however, might be due to its power of stimulating into temporary activity that condition of the protoplasm which occurs in a more permanent state, where the cell has acquired a true tolerance. The production of a condition of tolerance to the poison, immunity, in a case already affected with the disease, was at that time considered to be possible only in such rare conditions as hydrophobia. There the knowledge of the precise time of the infection, the long period of incubation, and the restriction of the microbe almost exclusively to the nervous tissue, afforded advantages not attainable elsewhere. In other diseases of an infective nature the introduction of more specific poison in the hope of producing a tolerance, would, we should expect, only aggravate the disease. Our aim in the cases where the disease has already manifested itself must, therefore, be to antagonise the action of the specific poison, and to allow to come into play the normal reactive powers of the tissues. This need not be by the products of microbes, as in our present experiments, but by drugs, as has already perhaps been shown clinically by the action of quinine in malaria. From a consideration of the fact that a number of organisms (erysipelas, prodigiosus, pyocyaneus, etc.), which presumably produce different toxines, act antidotally, it would appear that this is not a very uncommon action, and we are sanguine that exact pharmacological research on the ptomaines and other products of the specific bacteria may perhaps indicate those drugs which will exert such antidotal action.

At that time we were not prepared to receive without reserve the startling statements since made that immune animals were provided with soluble materials circulating in the fluids of the body, which, acting on the cells of the body, render them capable of carrying on their functions in the presence of large quantities of specific poison—quantities which, under other conditions, would inevitably prove fatal to the organism; but we pointed out that the inter-immunity described might be explained either by the changes induced in the cells, which acquired a state of tolerance in part coinciding for the two poisons, or, owing to the principle of solidarity which governs the animal organism, the change produced by the one tolerance might indirectly affect other potentialities of the cells, in one case favouring the refractory condition, but in others perhaps rendering them more susceptible to the action of the new poison.

From this statement you will see that I was at that time prepared to receive the antitoxic serum treatment of diphtheria and tetanus with open arms. Then, however, arose the tuberculin question, which somewhat shook my faith, and I was led—and I believe that I was the first in this country to take up this position—to the conclusion, after careful observation and numerous experiments, that although tuberculin had under certain conditions a specific effect, we could not rely upon it as a therapeutic agent in our treatment of tuberculosis. So greatly was my faith shaken that I was for some time extremely sceptical as to the value of serum-therapy, and in the case of tetanus I looked upon this special method of treatment as being a comparative failure, a statement that I even now make freely when applied to practical medicine, although the experimental evidence that can be adduced in favour of this method of treatment is very great indeed. In the case of diphtheria the results are so favourable that one was almost startled by the difference, and it became necessary to examine the position carefully. When the question is gone into and the clinical and experimental results obtained in the treatment of tetanus are placed side by side it is evident that we have an explanation of the success of the one and the failure of the other in the fact that in experimental tetanus the serum may be given before or immediately after the introduction of the toxine, whilst in the cases that come to us for treatment the toxine has been allowed to produce grave changes in certain important tissue elements before the disease can be said to have developed itself. In fact the mischief has been done before we are called upon to treat the patient. In the case of diphtheria, however, the marvellous success that has attended the serum treatment may be accounted for by the fact that we are called upon to treat the disease at the initial stage of the disease during the process of poison-production. Fortunately the presence of the diphtheria bacillus is manifested by the action of its poison on a sensitive mucous membrane, so that in the first stage of the disease the local lesion assumes far greater prominence than the general toxic symptoms, and we are therefore enabled to introduce the remedial serum into the system almost as soon as the poison can be absorbed from the local lesion, whilst, with the aid of cultivation and staining methods, it is possible, in a very large proportion of cases, to make absolutely certain of the presence of the diphtheria bacillus, at a very early stage, in cases of true diphtheria.

I cannot enter into detail concerning the history of the development of our present theories of immunity, but I may say that no single step in the advancement of serum-therapy as now practised, has been made until those previously made have been fully established.

In both diphtheria and tetanus the first real ground gained in this direction, was that specific micro-organisms, each bearing a distinct etiological relation to the specific disease with which it was associated were separated and described, first as regards their morphological, and then as to their general biological characters. Pure cultures were at length obtained, then came the discovery that the symptoms set up wherever these micro-organisms were allowed to act, were due apparently to the action of virulent poisons formed by these micro-organisms at the seat of their entrance into the body, and then diffused throughout the organism. The next step was in the direction of the production of immunity (*a*) to the action of the micro-organisms, (*b*) to the action of their poisons. It was found that by modifying the activity of the micro-organism, and then graduating the dose administered, certain kinds of animals became so accustomed to the presence of these micro-organisms that even virulent or non-modified organisms could thereafter be introduced into the body with impunity. As regards the second point, more definite and regular results were obtained. A small dose of the poison not sufficient to prove fatal to the animal gave rise, when introduced into the animal, to certain effects. After a certain interval had been allowed to elapse it was found that it required a larger dose to produce the same effects, and then a larger, and so on, the tissues gradually becoming poison-proof by a process of acclimatisation until enormous doses of the toxin were found to produce no manifest effect. Then arose the question, what is the rationale of this process? Are the alterations produced, situated in the solid or in the fluid constituents of the body? It soon became evident that both were more or less concerned, but following the observation that the normal serum of certain animals exerts a distinct bactericidal power, came the still more startling observation that the serum separated from the blood of animals rendered immune to diphtheria or to tetanus had acquired a wonderful power when injected into another animal of protecting and even curing the injected animal affected with one or other of these diseases. On this rests the whole system of serum-therapy.

The method now used, taking diphtheria as the example, is to render a large animal poison-proof by the injection of gradually increasing doses of an active diphtheria toxine; then serum separated from the blood of this animal is injected into the patient affected with the disease. This serum carries with it so much of the protective or curative powers of the poison-proof animal that the patient reaps some of the benefit, and if the remedy is given in time and in sufficiently large doses, he is cured.

[Details, illustrated by lantern slides and specimens, of the method of cultivation of the diphtheria bacillus and of the various methods of diagnosis were given, and then a short description of the manufacture of the diphtheria toxine.]

In connection with this it was insisted that the most important point to bear in mind was that the bacillus should be active, the long and rapidly multiplying forms apparently giving the best results. The medium generally used is a bouillon of distinctly alkaline reaction, to which two per cent. of peptone is added. A considerable quantity of a broth culture of the active bacillus is sown in the vessels in which the toxine is to be produced, and then the thin layer of fluid, though kept at rest as much as possible, has its surface fully ærated by means of a stream of moist warm air drawn over it. The nearer the bacillus is to the surface and the more equable the temperature —37° C.—is kept, the greater is the formation of toxin. At the end of a fortnight or three weeks, this culture is passed through a Pasteur-Chamberlain filter, by which the bacilli are kept back, only the toxine being allowed to go through. Toxine prepared in the manner indicated will be found to differ greatly in strength, even when made under apparently identical conditions, and even different flasks of the same batch are found to have very different poisonous properties. But when once the strength of any sample is known, the dose can be graduated with the utmost accuracy, and the process of immuniation, say of a horse, commenced.

A small dose, 1 or 2 c.c., injected under the skin of the neck or just in front of the shoulder causes a rise in temperature and also a swelling of considerable size, these however soon disappear; a larger dose is then given, and so on until a dose of 200 or 250 c.c. produces no more effect than did the small first dose. As soon as this stage is reached the animal should be sufficiently protected and should have a serum of sufficient activity. If things have gone well, the state of the animal, as regards coat, general condition, and weight should have improved, in fact if no such improvement take place the serum will not be of much value. Of course the strength or activity of this serum is not the same in every animal and an elaborate method of testing *this strength has to be resorted to. So irregular was this at first that Arouson separated the active principle from the serum (as Roux and others had done in the case of tetanus antitoxic serum) and then dissolved it so as to make a solution of known strength. [The method of separating the serum from the blood clot was then described and illustrated by means of lantern slides.]

It is here scarcely necessary to go into the method of injection of the serum, but one thing I think should be insisted upon, and that is that where serum of sufficient activity can be obtained the "drug" should be pushed, *i.e.* where it is not necessary to give too large a volume to obtain the desired results. It is sometimes stated that albuminuria is a result of the exhibition of this serum, but those who have had the most extensive experience of its use maintain that albuminuria is a symptom which calls for the exhibition of still larger doses of the serum, and that under these larger doses the albuminuria gradually disappears.

The question of the ill effects of the serum is too complicated to take up here, but it may be stated, generally, that most of the evil effects ascribed to the action of the antitoxic serum are in reality associated with the diphtheria-toxia, and not with the antitoxic agent. The only exceptions to this are the pains

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*See *Nature*, February 1st. 1895, p. 405.

in the joints and the transitory condition of erythema that follow the use of the serum. Most observers however are agreed that these conditions are really of little importance as they are seldom so severe as to give rise to much discomfort and moreover they usually pass off very quickly.

Now to return to the question of the different degrees of success that have been obtained in the treatment of diphtheria and tetanus. In diphtheria the early symptoms are purely local, the bacillus and its poisons are more or less localised with the result that the serum has the power of acting, prophylactically as it were, before the poison has had time to bring about organic changes, degenerations, etc., in the nerves and muscles; we find, therefore, that in the antitoxic serum treatment of diphtheria it is very important that the period of the disease at which the treatment is commenced should be taken into account, for experience has taught that the later the stages of the disease at which this serum is injected, the stronger or larger must be the dose given.

Behring recommends serum of 600 antitoxine units to be given in those cases in which treatment is commenced at the very outset of the disease—that is, when the first symptoms of diphtheria manifest themselves; serum of strength of 1000 antitoxine units for more advanced cases in which the prognosis is at all grave; whilst in still graver cases, and where the symptoms have been developed for some considerable time, it is often necessary to give a serum of 1500 units. It is necessary, therefore, to separate the cases in which the treatment has commenced at an early period, from those in which it is commenced only when the poison has had time to disorganise the tissues, and to render them incapable of reacting to the antitoxic serum.

The following table, given by Kossel, brings out the great importance of this element in keeping down the case mortality. In the first column is given the day of the illness on which antitoxic serum was first injected:—

Day of Illness.	Treated.	Died.	Percentage.
1	14	0	0.0
2	30	1	3.3
3	29	0	0.0
4	9	1	11.1
5	11	2	18.1
6	6	3	50.0
7	5	2	40.0
8	6	2	33.3
9	1	1	100.0
Unknown	6	1	16.6
	117	13	11.1

Much the same features have been observed in the experiments on tetanus. Here it is now generally recognised that after the subcutaneous injection of the tetanus bacillus or tetanus poison, the outbreak of general tetanus is preceded by the contraction of those muscles which lie next to the region of inoculation, and that this is due to the action of the tetanus poison on central nerve cells, in consequence of which they assume an increased and ever increasing excitability, the change taking place gradually but going on continuously so long as there is an absorption of the poison from the wound. It is recognised that the poison is conveyed to the nerve centres by the nerve trunks, and that it there acts on the ganglion cells, increasing their excitability and gradually covering a larger and larger area, but that there is, in addition, also a diffusion of the poison by means of the blood and lymph, as a result of which the general spasms become developed. Here, then, the poison is formed in the original wound, but when tetanus has set in there are profound organic changes in the spinal ganglion cells, and no amount of antitoxin injected can make good the ravages of the tetanus poison. In evidence of this let us take the following facts into consideration.

Ehrlich, Tizzoni and Cattani, experimenting with the rat and rabbit, and treating them with the blood serum of animals which had been rendered refractory to tetanus, maintain that they were always able to obtain a cure if the injections were commenced as soon as the slightest symptoms manifested themselves. Where the local symptoms had become pronounced, or were beginning to disappear, the results obtained by the serum treatment in their hands were slower and less certain, whilst in those cases in which tetanus was already becoming generalised success never followed this treatment.

In the light of the somewhat unsuccessful use of antitoxic serum in tetanus in the human subject, it is interesting to find that the quantity of the serum that it is necessary to give in order to obtain successful results after local symptoms have commenced, is at least one or two thousand times greater than is the quantity required to confer immunity when injected before the tetanus bacillus is infected. This is a most remarkable fact, and one which should be borne in mind in determining the efficacy of the antitoxic serum method of treatment as applied to the various diseases in which it is used. Beyond this, however, it is calculated that it is necessary to employ a dose of serum at least one hundred and fifty times as great as the above, if any success is to be obtained in treating the disease when the local symptoms have reached their height.

Assuming that the experiments made on the rabbit can be applied to man, Tizzoni and Cattani calculate that it would be necessary to give 0·7 c.c. of the serum or 0·06 gramme of its alcoholic precipitate at the outbreak of the first symptoms of tetanus, whilst at a more advanced period it would be necessary to inject 210 c.c. of serum or 12 grammes of its precipitate. This is an exceedingly large quantity of serum to inject subcutaneously, and even this quantity, in actual practice, has failed to give anything like satisfactory results; in fact these observers were only able to obtain about the same percentage of recoveries as in cases of tetanus treated without serum.

Ricklin gives a table of the cases which have been treated with antitoxic serum. He here gives the age of the patient, the duration of the incubation period, date of the disease when treatment commenced, quantity of serum injected, antitoxic strength of the same, the result, and the duration of the illness. It is gathered from this table that the cases of cure all belong to the chronic form of the disease, the benign form of tetanus, whilst those cases that ended fatally invariably developed in less than nine days; in the majority of cases, the duration of the disease not exceeding four or five days. In these cases, too, the period of incubation was comparatively brief.

It may be gathered that, so far, the success obtained by the antitoxic serum method of treatment of tetanus is comparatively slight, if, indeed, it can be argued that the success has been greater than that obtained by the ordinary methods of treatment.

If these facts are corroborated in connection of both these diseases, it follows that ere long some system of prophylaxis may do more for the stamping out of both diphtheria and tetanus than we are at present prepared to believe.

Now let us see what has been the case-mortality without and with the use of antitoxic serum.

During 1893 there were 13,694 cases of diphtheria notified in London, and the mortality amongst these cases was 3,195, or 23·3 per cent. To compare with the case-mortality in large well-found hospitals we will take the hospitals under the Metropolitan Asylums Board. The admissions in 1893 were 2,848, and the number of deaths 865, or 30·3 per cent.

Next take the reports of Messrs. Washbourn, Goodall, and Card of 72 cases with 14 deaths, or 19·4 per cent., with serum treatment, the average percentage of mortality for the hospital being 38·8 per cent.

Amongst the more important foreign statistics with regard to serum treatment may be cited the following:—

Kossel (Berlin) in 233 cases treated up to May, 1894, gives 54 deaths or 23·0 per cent., and in 117 cases treated from March, 15—Dec. 1, 1894, there were 13 deaths or 11·1 per cent., the average previous mortality being 34·7 per cent.

Aronson gives 255 cases with 31 deaths or 12·1 per cent., the previous mortality being 32·5–41·7 per cent.

Baginsky (Berlin) enumerates 303 cases with a mortality of 13·2 per cent., previous mortality 47·8 per cent.

Hahn (Berlin) gives 205 cases with 49 deaths or 24 per cent., previous mortality 40 per cent.

Wiederhofer, of Vienna, cites 100 cases with 24 deaths or 24 per cent., previous mortality 52·6 per cent.

Strahlmann gives a series of 100 cases with no death.

Ganghofner, of Prague, gives 110 cases with 14 deaths or 12·7 per cent., previous mortality 49 per cent.

Roux, Martin and Chaillou in Paris treated 448 cases and had 109 deaths or 24·5 per cent., previous mortality 57·7 per cent.

Moizard (Paris) cites 231 cases with 34 deaths or 14·7 per cent., previous mortality 50 per cent.

Lebreton (Paris) gives 242 cases with 28 deaths or 11·5 per cent.

(A series of complete statistical tables were here projected on the screen).

These statistics are of value only in so far as they indicate the general improvement that has taken place since the initiation of the serum treatment; but we are assured on all hands, by most of those who have had experience of the treatment of diphtheria by the older methods and also by the serum method, that the cases run a much more satisfactory course generally; even in grave cases, the symptoms are never so distressing—a most important point, as all who have had experience of cases of diphtheria are fully aware.

The results obtained by the serum treatment of diphtheria are so encouraging that I think it will be agreed that the future of serum-therapy is full of promise. A new field of investigation has been opened up, and a weapon, the full power of which we are still to a certain extent in a state of ignorance, has been placed in the hands of the physician. Pneumonia is the next disease to be attacked on this parallel, but it is extremely probable that other similar diseases may be treated by this method with at least some measure of success. I have attempted, in this brief and disconnected outline, to indicate merely the possibilities and the limitations of serum therapeutics as exemplified in their application to Diphtheria and to Tetanus.

ON SOME OF THE LESS COMMON DISEASES OF THE VULVA.

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(Continued from page 217).

VII.—VARIX OF THE LABIUM,

VARIX occurs more frequently in women than in men. Constipation, the prevailing vice of the sex, is largely responsible as a predisposing cause, and pregnancy, whenever it occurs, is apt either to start some varicose enlargement of the veins of the lower extremities or to greatly aggravate the disease when the latter is already present. But apart from these two causes there is probably no difference between the sexes in their liability to this affection. It is also highly probable that in many cases there must be some primary and congenital defect either in the valves of the veins, in the veins themselves, or in their anastomoses, which forms the essential cause of the disease. Only in this way can we explain the enormous varices which are occasionally met with in young persons who are otherwise quite healthy.

Perhaps we are inclined to under-estimate the trouble occasioned by varicose veins. Varix may be the cause of considerable pain of a dull aching character that brings with it a sense of fulness and a feeling of danger. This pain and discomfort may be sufficiently severe to prevent exercise and to incapacitate the patient for work, any exertion in the upright position being attended by some aggravation of the symptoms. Sometimes too a varix ruptures and life is lost, or nearly lost, from hæmorrhage.

Particularly do these observations apply to advanced varix of the labium. For varicose veins of the leg, and especially for those below the knee, so much comfort can be obtained from mechanical support that but little else is needed; but when varix affects the upper part of the thigh and the external genitals the case is very different. The position forbids the application of a bandage, and any other external support is worse than useless. If the patient be a woman, young and married, the danger of a fresh pregnancy (which must inevitably increase the disease) is apt to cause serious apprehension, and when a pregnancy occurs, the engorgement and increased distension of the varix, the difficulty of walking or sitting, the danger of rupture—either externally, with free bleeding, or subcutaneously, with the formation of a thrombus—all combine to make the condition distressing to the patient and a source of special anxiety to her medical attendant.

Minor cases may be treated with more or less advantage by (*a*) regulation of the bowels and of the menstrual function when this is checked or scanty; (*b*) the avoidance of undue exertion or strain; and (*c*) a proper alternation of rest and exercise and of position; but when the veins are ***always*** visible, enlarged, tortuous, and prominent, milder measures are useless, decided treatment may well be demanded, and some operative procedure is usually necessary.

Various methods of operating have been advised and employed for the treatment of this affection—subcutaneous ligature, elastic ligature, ligature with division of veins, excision of limited portions of the varix, and finally complete excision of the varix, have all been advocated and adopted.

The question immediately arises—Which is the best operation to employ? I think that of *excision of the varix.*

In the first case in which I employed this method I did it as a matter of necessity, for it is only in quite recent years that the operation of excision of a varix has been undertaken as a matter of choice. The history of the case and of its treatment was as follows:—

Mrs. D., aged 28, having three children, the youngest of whom was four years of age, was seen by me, in consultation, on May 17th, 1888. She had a large varix involving the right labium majus and extending to the "mons." The skin was very thin over it, and the bunch of blue distended veins beneath was large, prominent, tense, and painful. There was considerable varicosity on the upper part of the right thigh and on the hypogastric region of the abdomen, but at no place was the varix so marked as in the situation described.

The patient stated that she first noticed the swelling seven years before, that it had been steadily increasing in size ever since, and that latterly it had been attended by considerable pricking pain and discomfort. Occasionally the veins seemed to be on the very point of bursting, and an operation had already been advised. She was anxious to have this done if any improvement could be effected in her condition. It was pointed out to her that no local operation could cure the general tendency, but that the special varix in all probability could be removed.

On May 18th, assisted by Dr. Gilbert Smith and Dr. Whitby, I proceeded to operate by the method of elastic ligature advised by Mr. Lawson Tait in his book on Diseases of Women. I passed steel pins underneath the veins above and below the varix, compressing the veins against the pins by elastic in each situation. In this way every visible channel of blood communication with the varix was completely occluded. In spite of this, the varix continued to fill with blood; and not being satisfied as to the cause of this, I divided some of the veins on the varix side of the pins. The bleeding was copious, and it was evident that there was some branch or method of blood supply altogether uncontrolled by the pins. As I could not tell where this was, I determined to remove the varix altogether. The dilated veins were accordingly dissected out, the bleeding being stopped by catgut ligatures, and the whole varix was in this way completely removed. In the process of dissection I came across the supplying branches, which entered the varix on its under surface and found direct anastomising connections with the deeper veins. The bleeding was much less in quantity than I had anticipated, and there was no difficulty in removing the varix in the manner I have described. The incision was united with fine sutures, and healed without difficulty. When last heard of, the patient was quite well and had been greatly relieved by the operation.

Since this date, on the few occasions when I have had to operate for varix I have performed excision of the varix as the operation of election. In the following year (1889) Mr. Bennett, F.R.C.S., of St. George's Hospital, published several cases of varix in other parts of the body which he had treated in the same manner, and the operation is now, I believe, one of frequent occurrence. It should not, perhaps, be undertaken lightly; but whenever a superficial varix is sufficiently severe to demand an operation, the thorough removal of the disease is, in my opinion, the most surgical and therefore the best method of treatment. The operation should of course be absolutely aseptic. With this proviso there is but little danger. I have not had any untoward result in my operations. In one of these I removed some twelve inches or more of the saphena vein, but the course of recovery was uncomplicated and a-febrile. In some of the cases—perhaps in the greater number—the wound has not healed by "first intention." This is hardly to be wondered at considering the thinness of the skin covering the varix and the prolonged dissection that is sometimes necessary to remove the disease. It forms, however, some drawback to the employment of the operation. Recovery is slow under these circumstances, and the patient may have to keep her bed for three or four weeks before the incision is soundly healed.

ÆTIOLOGY OF DISEASES.*

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THE excellent Robert Burton, in his "Anatomy of Melancholy," says: "'It is in vain to speak of cures, or think of remedies, until such times as we have considered of the causes;' so Galen prescribes Glauco; and the common experience of others confirms that those cures must be imperfect, lame, and to no purpose, wherein the causes have not first been searched, as Prosper Calenius well observes in his tract *de atrâ bile* to Cardinal Cæsius. Insomuch that 'Fernelius puts a kind of necessity in the knowledge of the causes, and without which it is impossible to cure or prevent any manner of disease.' Empirics may ease, and sometimes help, but not thoroughly root out; *sublatâ causâ tollitur effectus*, as the saying is, if the cause be removed, the effect is likewise vanquished. It is a most difficult thing (I confess) to be able to discern these causes whence they are, and in such variety to say what the beginning was."

Even though we do not go quite so far as this learned author, most of us, I think, are prepared to admit the importance of a knowledge of the causes of disease; for it is matter of common observation that where there is precision of knowledge of the cause of disease, there is corresponding directness and precision in our treatment of the disease, as in the cases of scurvy or lead-palsy. Though, at the same time, we must avoid falling into the pleasing belief that once discover the cause of a disease, the treatment is necessarily easy and effective; and must also recognise that precision of treatment may be attained in the absence of a knowledge of the cause of disease through other knowledge, as by a precise knowledge of morbid anatomy in the case of gastric ulcer, or in the case of rheumatism, by a purely empirical knowledge.

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* A Paper read before the Queen's College Medical Society.

The great extension of the science of preventive medicine in recent years is, again, a tribute to the importance of a knowledge of ætiology of disease, for preventive medicine begins with such a knowledge, and where that is absent, leaves us without its aid.

The object of this paper is to pass in review our knowledge and notions of whatever we may hold to be a cause of disease. And it may at once be confessed—it is indeed universally admitted—that our knowledge of this subject is small, and our ideas vague or shadowy. True it is that ætiology has its triumphs; let me instance the discovery of the cause of scurvy. But if there are a few instances in which we can assign to a disease a definite, precise, and invariable cause, there are far more in which we can only point to one or more factors as in some way connected with the appearance of the disease, whether essentially or accidentally we can scarcely tell; and there are many cases in which the most reliable authors prefer to vague speculations the frank admission that our ætiological knowledge is a blank. Let us illustrate each of these phases of knowledge by examples culled from a well known text-book.

1. *Scurvy.*—Here the language is precise and definite. "By the middle of last century scurvy was proved, though not universally believed, to be caused by something wrong in diet. The inquiry has since been pushed further, and of all the constituents of healthy diet, the one of which the lack causes scurvy is now proved to be a due supply of *fresh vegetable food.* The question whether scurvy ever arises when a proper quantity of such food has been taken may be answered in the negative." The only qualifying admission made to this statement, and that grudgingly, is "It is possible, however, that the development of the complaint is favoured by want of sunlight, residence in narrow, cold, dark, damp dwellings (such as cellars or the casemates of a fort), over-fatigue, excessive drinking."

2. *Rheumatism.*—Here, unfortunately, all is changed. The

writer's confidence is gone, and he gropes about, telling us what is stated, or what is generally regarded, and doubting everything. "Cold," he says, "is generally regarded as the most frequent cause of acute rheumatism. But this is open to question." "The only efficient kind of cold is getting wet through." "Careful inquiry as to previous exposure to wet and cold has led to a negative statement in probably half the writer's patients: and there is no question that many, and perhaps the majority of cases of acute rheumatism are not due to any tangible exposure." Our author now goes into the question of what month in the year finds rheumatism most frequent; he gives his own statistics without comment, and says, "Dr. Archibald Garrod gives a series of similar observations by nine different writers in the fifth chapter of his recent work on 'Rheumatism,' and finds great discrepancy in the results." The geographical distribution of the disease next excites attention, but "is as yet too imperfectly known to enable one to state positively its bearings upon the question of its relation to climatic conditions." Muscular exertion we are told is, "according to some authors, an exciting cause of rheumatism." Hereditary predisposition is inquired into, and we are then told that "whether the disease is more apt to occur in persons of one *complexion* than in those of another is doubtful." "A very general impression is that most patients with rheumatic fever have light hair and grey eyes. But this applies to all diseases in England, because our population is chiefly xantho-chroic." Following this we have the fact that rheumatism not infrequently follows *scarlet fever*, and the statement that the *puerperal* state is also believed to bear a causal relation to rheumatic fever; and after discussing the bearing of sex and age, our author concludes—"On the whole we must confess that the causes of rheumatism are obscure. Practically all that can be said is that those who are young, those who are poor, and those who have suffered from it already are the most likely to be attacked by the disease."

3. *Psoriasis.*—Here again the language is plain and definite, as in the first instance. "The cause or causes of psoriasis are

absolutely unknown." Now it is with no idea of inviting your derision that I have given this picture of the state of our ætiological knowledge. The vagueness of our second illustration is perhaps almost as distressing as the blank ignorance of our third; but at the same time it must be clearly recognised that, until more precise knowledge comes, such statements as those made with regard to rheumatism have their value. It is not safe to reject any well-ascertained causal relation as trivial, for in some one of these diverse scraps of knowledge may be contained a fact which points the way to fuller knowledge of the disease. Hence it is that we find in our text-books and in our Dictionaries of Medicine under the head of "Ætiology" long lists of conditions, some known and approved causes of disease, and some whose connection with the subject seems as slight as their connection with one another.

To satisfy the theoretical requirements of ætiology we must be able to assign to each disease a definite cause or causes, and must understand the exact way in which the cause produces the disease. Unfortunately this latter requirement still further diminishes the number of diseases in our knowledge of the causation of which we can feel any satisfaction. Thus *scurvy*, instanced above, has been assigned to a definite cause, lack of fresh vegetable food, but we remain ignorant what constituent of fresh vegetable food is concerned in the matter, or in what way its withdrawal acts to produce the disease. In saying this I may be held to be assigning to ætiology a part of the province of pathology, but, of course, ætiology is itself but a department of pathology, and the full exposition of the production of diseases by causes must, I think, come within its scope.

Now before we can properly discuss the causes of disease it appears necessary to define, with some approach to accuracy, our idea of disease. The task is, however, one which presents considerable difficulties. Although we, no doubt, all know very well what we mean by disease, no generally accepted definition is to be found, and the attempts of authors of text-books in this direction too frequently demonstrate their caution rather than their helpfulness. I have no reason to believe that I shall succeed where these angels fear to tread, and it is therefore only lest I should be held to have shirked an unpleasant duty that I have attempted to define disease as follows:—A bodily condition attended by continued pain, discomfort, deformity, or inability to perform the ordinary functions of mankind, or endangering or terminating existence. This for a definition of disease; and were I asked to define *a* disease, I would say—A disease is a bodily condition or a sequence of bodily conditions attended by continued pain, discomfort, deformity, or inability to perform the ordinary functions of mankind, or endangering or terminating existence.

The definition of disease as a bodily condition reminds us that, apart from disease and within the limits of perfect health, the body is continually changing; not only does the body of one individual present to us as regards liability to disease a problem different from that of another, but the same individual may at different periods of his life present absolutely different characteristics regarded as a subject for disease. One year he may be free from disease, and the student of ætiology may formulate certain ideas as to the possibility of his acquiring certain diseases; twelve months later he may be equally free from disease, but the conclusions drawn regarding him may from an ætiological point of view have to be quite different. There are in fact two things to be reckoned with in the causation of disease; (1) the body in which it is manifested; (2) the external surroundings which affect that body.

Hence the portentous length of lists of causes of disease, for there is no *prima facie* reason why any change in the surroundings of man should not act as such a cause, while any influence to which he has ever been subjected may be brought in to explain the causation of disease, as having in some way moulded the tendencies of the body whose present condition is the disease in question.

At the same time we see a way to form a rough division of the causes of disease into two classes: (*a*) all influences which have at any time contributed to make the individual more liable than the average to the development of disease or diseases; (*b*) those which determine the actual occurrence of the particular bodily condition (disease) that may be under discussion. Those in the first group are what we have been accustomed to call predisposing causes: those in the second group we may call essential causes. It is to be noted that the same thing may act as a predisposing cause in some cases, and in other cases, usually in a more severe form, as an essential cause.

I now propose to consider, one by one, various factors which have been regarded as causes of diseases. Before doing so, let me utter a warning against rash conclusions as to the cause of disease. In no department of medicine are we in practice more prone, I think, to hasty judgment. A particularly unhappy tendency is that to assign as the cause of a disease some other disease of whose past or present existence in the patient there may be no particle of proof: the words rheumatic, gouty, strumous, occur to us at once in this connection. Another thing to be remembered is that complex causes of disease must be resolved into their component factors: rigid analysis of this kind will show that there are very few factors which can be accepted as approved essential causes of disease.

We will first consider such causes of disease as may, I think, be fairly called predisposing causes—those, viz., to repeat, which affect the body directly with regard to disease prior to the development of disease. And I may here exclude from the list circumstances which predispose to the disease simply by affording continued or frequent opportunities for the action of the essential causes, it being my intention to retain only factors which make one person, placed under exactly the same conditions as another, more likely to have a disease. The mere exposure to the causes of a disease cannot be properly reckoned a predisposing cause of the disease.

Race.—This, obviously, is about as far back as we can get in the search for predisposing causes. We have very little information on the point. The negro race is perhaps the most marked separate race of which we have much knowledge. Of this, it is stated, that it is specially liable to smallpox, leprosy, tuberculosis, and cholera; while it enjoys almost complete immunity from yellow fever and, comparatively, from cancer and malaria, and is seldom attacked by diphtheria or dysentery. The yellow races, it is stated, are very prone to ophthalmia and myopia; and insanity is said to be relatively more common among them than other races. Among Europeans hysteria and insanity are said to be most marked in the Latin races; but in white races almost the only observations recorded relate to the Jewish race, which exhibits a special predisposition to diabetes and nervous disease; while, on the other hand, it appears to enjoy some measure of immunity from croup.

In the *British Medical Journal* of January 12th, 1895, the following conclusions are stated as being probable for the United States, now the great mixing-ground of races. (1) The coloured race is shorter-lived than the white, and has a very high infantile death-rate; it is specially liable to tuberculosis and pneumonia, and less liable than the white race to malaria, yellow fever, and cancer. (2) The Irish race has a rather low death-rate among its young children, but a very high one among adults, due, to a considerable extent, to the effects of tuberculosis, pneumonia, and alcoholism. (3) The Germans appear to be particularly liable to disorders of the digestive organs and to cancer. (4) The Jews have a low death-rate and a more than average longevity; they are less affected than other races by pneumonia, consumption, and alcoholism, but are especially liable to diabetes, locomotor ataxy, and certain other diseases of the nervous system. Allowing for the effects of different social customs, it thus seems probable that children of different races possess peculiarities which will make a difference in their tendency to develop diseases when exposed, under exactly similar circumstances, to the essential causes thereof, and which may therefore be called predisposing causes.

Heredity seems to come naturally next to *race.* It may be conceived to have an effect in various ways. (1) *Specific diseases,* as variola or syphilis may be ***transmitted***. Either the child may share in a disease contracted by the mother during pregnancy, or the sperm- or germ-cell may carry in itself the disease to be subsequently manifested in the course of development, either in utero or after birth. (2) There may be an inherited ***immunity***, *i.e.*, the child may share with its parent an exceptional power of resisting certain essential causes of disease, as specific contagia. (3) There may be inherited ***susceptibility*** to some of the essential causes of disease, as specific contagia, certain poisons, cold. Both immunity and susceptibility may be general or local (confined to some tissue).

Of conditions frequently hereditary may be mentioned gout, the hæmorrhagic diathesis, pseudo-hypertrophic paralysis, Friedreich's disease, hay-fever, enuresis, many neuroses. The names of some of these remind us that hereditary diseases are not necessarily manifested in the parent as well as the child, but that this origin is very often indicated by the appearance of a disease in 2, 3, or more children of the same family, or by its having occurred in brothers or other relations of the father or mother.

Intermarriage may be considered in connection with heredity. It is widely supposed to be a potent source of disease. Idiocy, insanity, deaf-mutism are among the evils supposed to follow the marriage of first cousins and others of kin. The truth appears to be that hereditary influences are intensified by intermarriage. If therefore there is a tendency to disease in a family, the chances of its transmission are largely increased by intermarriage among its members. If, however, the family is a good healthy stock, the probability is that the offspring resulting from intermarriages will show no deterioration.

Idiosyncrasy also may here be mentioned. It has been defined as any peculiar and not obviously correlated reactions against external influences exhibited by any individual. The fact that these reactions sometimes amount to disease, bring it within the scope of our subject. It may be hereditary or otherwise. In the former case there is but a slight difference between it and inherited susceptibility to disease. But the latter condition we regard as an exaggeration of a tendency shared by all for a certain disease to follow a certain cause or causes: in the former (idiosyncrasy), we recognise a liability to the development of disease as a result of certain influences, which leave the immense mass of mankind unaffected for evil, and are therefore not set down as causes of disease. Thus, "some patients are sure to be seized with asthma if they come near certain kinds of animals: cats, rabbits, dogs, horses, guinea pigs, etc." Eggs, honey, sugar or fish, may produce gastric pain, nausea or vomiting: strawberries, symptoms of intense nervous shock. We here prefer to lay stress on the predisposing cause, the idiosyncrasy of the patient, rather than the essential cause, the article of food, or the emanation from the animal, as the latter is with the great majority of people inoperative as an essential cause.

Imperfection of development may be hastily assigned as the cause of certain diseases, as the so-called morbus cæruleus of infants. It may of course come into play before birth, or at any time prior to that of the final development of the individual. It requires careful examination: in the instance mentioned, morbus cæruleus, it would appear to be not a cause, but a part of the disease, the cause having to be sought in some intra-uterine influence. It may be conceived that an imperfection of development of some part of the body may not be in itself a disease, but may, by creating a readiness to yield to some essential cause of disease, have to be reckoned among predisposing causes. Thus an undescended testicle is said to be especially liable to malignant disease.

Previous diseases.—These may leave the body, after recovery, and therefore not in a condition of disease, with different susceptibilities to the attacks of the essential causes of some diseases than before. These may be negative or positive; thus an attack of small-pox confers a negative susceptibility amounting almost to immunity from the attacks of the essential cause of small-pox; so also many other of the specific infectious diseases leave the patient after recovery with more or less complete immunity from subsequent attacks. On the other hand, erysipelas seems, if anything, to leave those who have suffered from it more obnoxious than formerly to its attacks; rheumatism and chorea frequently recur. The readiness with which we admit instances of a disease leaving the patient after recovery more suceptible than the average to some other disease or diseases, will depend upon the strictness of our views with regard to sequelæ. Thus some may say that diphtheria leaves patients very susceptible to a form of paralysis, and scarlet fever to nephritis, but a majority would probably prefer to regard both these conditions as part of the former disease in each case. That acute rheumatism leaves children predisposed to chorea is however a generally acknowledged fact, and a good instance of a disease leaving a patient, though in health, with a decided increase in his liability to attacks of another, quite different, disease. *Diathesis* may here be mentioned: it is defined by Mr. Hutchinson as any bodily condition, however induced, in virtue of which the individual is, through a long period, or usually through the whole life, prone to suffer from some peculiar type of disease. Diathesis is not itself a disease, the term may be used when its subject seems perfectly well. If the diatheses possess any features that would bring them under our definition of disease, such features cannot be discerned by any means we possess. A diathesis does not cause pain, discomfort, deformity, or inability to perform the ordinary functions of mankind, nor apparently does it in itself endanger existence.

Pathological tissue-changes from previous diseases carry with them liability to many other forms of disease, but the chain of events being continuous, with no interval of real health, though there may be an appearance of health, we must exclude these pathological changes as separate predisposing causes of disease.

Temperament has frequently been regarded as carrying with it special liabilities to disease, or some modifying power over disease. Were the various temperaments more sharply defined, more easily recognised, and less liable to be confused with the results of actual disease, we might with more readiness investigate their relation to disease. Temperament is not in itself either a predisposing or exciting cause of disease.

Age has, of course, very definite predisposing relations to disease. The allocation of certain diseases to certain periods of life is in some cases almost accidental. Measles is mostly a disease of childhood, because all children are exposed to the cause of measles, and nearly all yield to those causes; but there is nothing specific in youth that makes it susceptible to measles. So adults only suffer from delirium tremens, because until adolescence is reached we are restrained from approaching the cause of that malady. The real diseases of youth are those which depend for their development on the incomplete growth of the body. Thus rickets is essentially a disease of extreme youth, because its cause fails to produce the disease when the growth of the bones is complete. In infancy and childhood the nervous system is rapidly developing, and therefore unstable and liable to disease: hence many nervous disorders are almost peculiar to childhood. As adult life is reached differentiation of tissue becomes more and more marked, hence a cause which in a child lighted up disease, almost over its whole body, or through the whole length of its alimentary canal, now has its effects limited to some special tissue. Old age is marked by the appearance of degenerations in the tissues, themselves certainly diseases, and on account of which the aged succumb to insignificant exciting causes.

Sex.—The female frame is less able than the male to withstand exposure and strain. Hence a condition of debility predisposing to disease is more readily induced in women. They more readily succumb to mechanical or mental strain. Differences of dress, of mode of life, of occupation, no doubt account for the observed differences in the liability of the two sexes to various diseases in many cases. Although there is inherent in the sexes a difference of predisposition, yet there are few diseases, if any, which are the exclusive privilege of either sex, though hysteria and chlorosis are almost confined to women. From the point of view of disease you may regard woman only as more delicate man, possessing however in her reproductive organs a wider field for the attacks of disease than is presented by the similar system in man.

The foregoing conditions appear to me to be worthy of being grouped together as predisposing severally to some particular disease or diseases. Let me now add to them one which predisposes to disease in general, which increases the susceptibility to the attacks of any pathogenic agent. I mean *debility*. For the inclusion of this I may be challenged on the ground that debility is itself a disease. But though I would admit that the condition of debility following some actual disease may very properly be regarded as part of the attack, yet I feel equally certain that such a condition may exist unmanifested by any such signs as would entitle us to call it a disease, and without having been preceded by any actual illness. That the condition itself when extreme is entitled to rank as a substantive disease does not, if admitted, impair this proposition; and, moreover, I am inclined to think that the debility when so marked will be found to be only a part of the bodily condition which exists and merits the name of a disease. We are indeed here brought face to face with the fact that our statements are comparative only. Conditions which we must still call health merge gradually into others which we must call disease. Hence the difficulty of drawing a dividing line and defining disease. The admission of debility as a predisposing cause of disease considerably extends our list of such factors. For many are the causes contributing to its generation. Briefly they are those which have been called hygienic—insufficient food, improper clothing, impure air, insufficient sunlight, want of exercise, overwork, worry, etc.

Passing on now to essential causes we may put down first—*Mechanical Force* exerted in pressure, tearing or breaking, or irritation. With the force acting from outside we get all the ordinary traumatic conditions. The force may however be generated within the body, and is then no less a potent source of disease. Thus violent muscular efforts lead to increased pressure within the arterial system, which may result in aneurism, valvular injury, cardiac dilatation, etc.

Chemical Forces are seen at work in the production of disease in the action of poisons. The ordinary animal, vegetable, and inorganic poisons call for little comment. There are, however, certain forms of poisoning of peculiar interest—viz., cadaveric, fæcal, and septic—*cadaveric*, by substances derived from the decomposition of dead bodies; *fæcal*, by substances derived from decomposing fæcal matter; *septic*, by substances derived from a part of the living body which is undergoing decomposition. These decompositions are always associated with the presence of micro-organisms, which do not, however, themselves constitute the poison. The poisons are certain of the chemical products resulting from decomposition, among which products may be mentioned numerous amine bases, indol and skatol, tyrosine, and a number of fixed alkaloidal bases called ptomaines. The interesting point is whether substances of this nature, which must be generally or always present in the intestinal contents, may not—by abnormal absorption, failure of normal excretion, abnormal production, or failure of normal destruction—be the cause of some of the diseases whose ætiology is at present a mystery.

Thermal Force also undoubtedly causes disease. Extreme heat locally of course causes burns and scalds; extreme cold a very similar condition. Intense radiant heat will cause meningitis or sunstroke. Short of its local effects extreme heat appears to be well borne, but after a certain time a condition of heat-apoplexy follows. The influence of cold and chill in the causation of disease requires careful consideration. They form the most overworked item in popular ætiology; and among physicians also have from time to time been pressed into service to explain almost everything. We should beware of attempting to explain too much by their aid, as by so doing we may be delaying the discovery of a more satisfactory cause. In no disease, perhaps, are they more relied upon than in rheumatism; yet we have seen how cautiously their influence in the causation of this disease is spoken of by responsible authors. It is, however, certain that cold has a powerful depressant effect on the body generally, and may of itself cause death, possibly by simply lowering the temperature of the body, and also that exposure to cold may cause inflammations of certain serous membranes and internal organs. Cold air is undoubtedly an irritant to the mucous membranes with which it comes in contact. Cold is more decided and dangerous in its effects when associated with damp and wet. The manner in which it acts is uncertain. It may interfere with the circulation; may affect the extremities of nerves, and excite disease by reflex action; or it may check secretions of the skin, the mucous membranes, and other parts. According to Payne, "the most plausible explanation is that of Rosenthal, that disease from cold happens when the skin is very full of blood from exposure to heat or excessive heat-production, and is then cooled rapidly, so that there is a great difference in the temperature of the blood in the skin and that of the blood in internal parts. At the same time, the cutaneous vessels contract, and thus masses of cooled blood are thrown in upon the internal organs, of which the lungs are, for obvious reasons, most likely to suffer."

Electrical Force, in the form of the powerful induced currents used for electric lighting as well as lightning stroke, may cause death. Short of this, severe shock is, I believe, the only morbid condition attributed to this source.

Vital Organisms as the cause of disease have long been known. They are animal, epizoa, living on the surface of the body, as the acarus scabiei, and entozoa, dwelling within, as the hydatid; or vegetable, epiphytes and entophytes. To these latter, microbes or germs as they have been called, scientific attention has been lately directed almost to the exclusion of other causes of disease. As a popular explanation, they have pushed out of court the various diatheses, and almost suppressed cold and wet as an explanation of disease. And yet, in the last few months, an eminent specialist has expressed his disbelief in their pathogenic power, and his conviction that germs are the result, not the cause of disease. It is not within the scope of my paper to give you an account of germs or defend the germ theory of disease, so far as there is such a thing. But that the existence of definite pathogenic germs has been proved absolutely may be regarded as an incontrovertible fact. I quote from Fagge the stringent conditions which, he says, "justify our regarding a given organism as the material cause, the contagium vivum, of a given malady :—

(1) The malady must have such distinct and constant features, whether clinical or anatomical, as shall enable it to be identified.

(2) The microphyte must be itself distinguishable from others by its size and shape, its staining properties, but above all by its mode of propagation in 'a pure cultivation' (*i.e.*, artificially separated from other organisms), and the form and colour of the colonies it produces.

(3) The organism thus identified must occur in the blood or tissues—not merely on the surface, cutaneous or intestinal, but below the epithelium, in the lymph-spaces or blood-vessels,—in every case of the disease in question.

(4) It must not occur in the human body except in cases of the particular disease in question. It may, however, conceivably exist in other animals, without giving rise to the same pathological symptoms; or in air or water—as it exists in the test-tubes and plates of 'pure cultivations,'—and in whatever media convey the contagion from one person to another.

(5) When a pure cultivation of the organism is introduced into the blood and tissues of an animal, the phenomena, clinical and anatomical, of the disease in question must be reproduced.

These conditions in all their rigor have been satisfied in the case of Anthrax, and with scarcely less abundant proof in that of Relapsing Fever."

Diet.—Excess of food, want of food, and neglect of proper proportion of the elements of food, all cause disease. Substances taken as food may, in smaller or larger doses, act as poisons, *e.g.*, alcohol. The development of ptomaines from over-kept food may be mentioned in this connection. A specific dietetic cause is the withholding of some special kind of food, as, in the case of scurvy, of fresh vegetable food. Similarly, rickets is probably due to the withholding of fat from the dietary; but this cause only acts in this way in children.

Overwork.—Up to a certain point, use of an organ improves its condition, but further use, overwork, impairs it, atrophy, or sometimes inflammation being the result. Thus overwork of some part of the body becomes an essential cause of disease, as we see perhaps in general paralysis, some of the systemic diseases of the spinal cord, and the diseases called hyperkinetic, together with the more simple case of pharyngitis or laryngitis caused by overuse of the voice.

Mental influences are undoubted causes of disease, mainly the emotions, as fright, grief, shock, and the vague condition known as worry. They seem to act most readily on the nervous tissues, but also increase the susceptibility of the body generally to disease; herein they act as predisposing causes. The influence of mental impressions on distant organs is shown in the case of acute yellow atrophy of the liver, on the nervous system in chorea, and ideal paralysis. Imitation also leads to the development of some nervous diseases.

Heredity may be the only discoverable cause of a disease and must therefore be admitted in practice among essential causes.

In here closing my list of causes, I may no doubt lay myself open to charges of omission. For instance, I have not mentioned climate or occupation, either as predisposing or essential causes of disease. Each of these when analysed will be found, I think, to contain only factors of disease already discussed. Thus the effect of climate is mainly a question of the greater or less operation of cold and wet, altitude being perhaps the only specific factor; occupation is a cause of disease either by exposing to the action of poisons, mechanical irritants, cold and wet, overwork, or non-hygienic conditions. So it will be found, I hope, that I have made no important omission, though anything like completeness is out of the question.

I have not concerned myself with vague speculations where we have no knowledge; thus I have said nothing of the cause of cancer, or of diabetes, or the atrophy of the thyroid gland, which with its secondary consequences constitutes myxœdema. What I have tried to do is to present you with a review of the known causes of disease, and to point out that they require subjection to rigid analysis, after which we may find them capable of some natural arrangement.

REPORTS OF CASES.

A CASE OF CEREBRAL HÆMORRHAGE.

BY W. A. MARRIS, M.B.
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T. R., aged 70, was admitted to the General Hospital, on January 29th, under the care of Dr. Rickards. He had fallen forward insensible while lifting some heavy bags out of a cart. When seen at the hospital an hour later, he was completely unconscious, with stertorous respiration and flaccid cheeks. On rubbing the chest, he moved his arms slightly and groaned, but could not be further roused. The left side of the face seemed drawn a little upwards, and there was slight external squint of the right eye. The pupils were moderately contracted, equal, and insensitive to light. The conjunctival reflex was absent. All the limbs offered a certain and equal amount of resistance to passive movement. The bladder being full, a catheter was passed and twenty-five ounces of urine were drawn off. It contained no albumen, had spec. grav. 1020, and contained a fair quantity of sugar.

Five hours later the breathing was still stertorous but slow (eight respirations per minute), and had taken on the Cheyne-Stokes rhythm. Respiration was carried on by the diaphragm, the intercostal and thoracic muscles not being used. No squint and no inequality in the facial muscles could now be detected. There was an occasional movement of internal rotation of the extended arms, but otherwise the limbs were in the same state as before. The knee-jerks were normal, there was no ankle clonus, and the plantar reflexes were both absent. The catheter was again passed, and twenty-eight ounces of urine drawn off. It still contained sugar, but no acetone, and there was no smell of acetone about the patient's breath. He remained in the same condition through the next day, the pulse and respiration gradually failing till he died, thirty-six hours after admission.

At the *post mortem* examination a large hæmorrhage was found in the left cerebral hemisphere, which had ruptured into the lateral ventricle, and, passing down through the third ventricle and iter, had burst out of the fourth ventricle so as to compress the pons and medulla as well as the third to seventh cranial nerves on both sides.

Glycosuria in gross cerebral lesions is rare; and its presence in this case, together with the imperfect history at first obtained, led to the diagnosis of diabetic coma. On further examination in the ward, the character of the respiration and general aspect of the patient, and the history of sudden onset, readily suggested cerebral hæmorrhage. The localisation of the hæmorrhage was, however, difficult. There were no unilateral signs whatever, the strabismus was quite temporary, the facial nerves were equally involved, as were the limbs, and there was no conjugate deviation of head or eyes. On the other hand, the contraction of the pupils, Cheyne-Stokes respiration, failure of deglutition, polyuria (28 oz. being secreted in five hours), and glycosuria led to the belief that the mischief was about the medulla; and there is little doubt that the pressure of the blood which had found its way to this part was the cause of the symptoms. The glycosuria may of course have been present before the hæmorrhage occurred, being of the gouty type and producing no symptoms. The patient's sons, however, knew nothing of any kidney disease on their father's part, and, though working with him, had noticed no frequency of micturition. His body was muscular and well nourished. Though gouty glycosuria therefore cannot be absolutely denied in this case, it seems more probable that the sugar in the urine was caused, like the polyuria, by disturbance of the medullary centres.

PERISCOPE.

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URINARY AND RENAL DISEASES.

BY ROBERT SAUNDBY, M.D. EDIN., F.R.C.P. LOND.
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DIABETES.

G. Hoppe-Seyler. *Beiträg zur Kenntniss der Beziehungen der Erkrankung des Pancreas und seiner Gefässe zum Diabetes mellitus. Deutsches Archiv f. k. Med.* Band 52, Heft 1-2, p. 171.—A case of diabetes in a woman aged 57, in whom softening of the brain occurred, followed soon after by her death. The pancreas was large, weighing 300 grammes, and had undergone almost complete fatty transformation; its arteries were narrowed and thickened and the veins dilated. Under the microscope some remains of pancreatic tissue could be seen, but the nuclei of the cells did not stain, and the connective tissue about the ducts was increased; in parts there were islands of connective tissue apparently replacing glandular tissue.

He also refers to a case of diabetes insipidus with transitory glycosuria in which the pancreas was fatty and cirrhosed and shows traces of hæmorrhage into its substance. Also to a case of hæmorrhage into the pancreas without any glycosuria, at least he does not mention it. He gives an imperfect summary of the literature of this subject.

E. Hédon. *Influence de la piqûre du plancher du quatrième* *ventricule chez les animaux rendus diabétiques par l'extirpation du pancréas. Archives de physiologie,* 5th series, Vol. vi., p. 269. Hédon has performed a series of experiments on dogs rendered diabetic by extirpation of the pancreas in order to determine the effect of puncture of the floor of the fourth ventricle under these conditions. The results were uniformly to show that after the latter procedure the glycosuria increased considerably in amount, generally by thirty or forty per cent., sometimes more.

Morat and Dufour. *Les nerfs glyco-sécréteurs. Archives de physiologie,* 5th series, Vol. vi., p. 371.—The authors have endeavoured to prove by a series of experiments on animals that glycogenesis in the liver is the result not of vaso-motor disturbance, but of the direct influence of secretory nerves.

R. J. Williamson. *The Condition of the Pancreas in fourteen consecutive cases of Diabetes Mellitus.* The *Lancet,* 1894, Vol i., p. 927.—This paper really contains brief notes of fifteen cases of diabetes, in all but two of which there was marked emaciation; the pancreas was normal in seven, atrophied in four, cirrhotic in four; in two of the atrophied cases fatty degeneration was present.

Hausemann. *The Pancreas in Diabetes.* Int. Med. Congress. *Brit. Med. Journal,* 1894, Vol. i., p. 796.—Professor Hausemann estimated the frequency of the association of pancreatic disease with diabetes at 50 per cent., the most frequent lesion being simple atrophy.

Thiroloix. *Influence du régime alimentaire sur la production du Diabète expérimentale. Le Prog. Méd.,* 1894, Vol. i., p. 286.—Thiroloix states that an animal which has fasted for a week is rendered diabetic by puncture of the floor of the fourth ventricle, but not by extirpation of the pancreas [as if the pancreas could only affect hydrocarbons on their way from the intestine, while the puncture directly stimulates hepatic glycogenesis.—Rep.].

Fleiner. *Zur Pathologie der calculösen und arterio-sclerolischen Pankreascirrhose und der entsprechenden Diabetesformen. Berl. klin. Woch.,* 1894, Nos. 1 and 2.—The author relates two cases to illustrate the pathology of pancreatic diabetes. In the first, the patient suffered from cardialgia, subsequently diagnosed as pancreatic colic; but four months before his death he developed symptoms of diabetes. At the autopsy the pancreas was found cirrhosed and atrophied, while its duct was filled with calculi. In the second case, the patient had suffered for six years from attacks of pain, attributed to gallstones. Five months before her death the symptoms of diabetes supervened, and at the autopsy the pancreas was atrophied and cirrhosed. In both cases there was marked endarteritis of the vessels of the gland. He attributes the lesion primarily to the vascular change; but the main point is that the diabetes did not supervene until the disease had destroyed the whole of the glandular tissue of the pancreas.

Kauffmann. *Mécanisme du diabète pancréatique. Le Progrès Méd.*, 1894, Vol. i., pp. 191, 223, 285.—Kauffmann states that suppression of the function of the liver diminishes the glycæmia in dogs made artificially diabetic as well as in healthy dogs. The hyperglycæmia therefore depends upon a function of the liver and not upon diminished destruction in the tissues. But the pancreas normally exercises a controlling influence over the glycogenic function of the liver, so that when the pancreas is removed, hyperglycæmia or even glycosuria results. This occurs even when all the nerves to the liver are divided, proving that the pancreas acts by means of its internal secretion, which passes in the circulation to the liver, and limits its glycogenic function.

Solomon Solis-Cohen. *Lævulose and Strontium Bromide in the treatment of Diabetes Mellitus, with three illustrative cases. International Clinics*, Vol. iv., Series iii., 1894.—The author recommends strontium bromide, in thirty-grain doses, three times a day in obese and gouty patients, in whom however most remedies have a fair measure of success. He gave lævulose without harm. The dose permitted was one ounce daily.

R. Saundby. *A case of Diabetes treated by Lævulose. International Clinics*, Vol. iv., Series iii., p. 78.—The case was one of moderately acute diabetes in a boy of 14, the amount of lævulose from an ounce to an ounce and a half daily, and the result was no increase in excretion of sugar or urine, while the patient gained weight, improved in general health, and very much appreciated the addition to his diet.

Monin. *Traitement du Diabète. Le Progrès Méd.*, 1894, Vol. i., p. 265.—Monin recommends permanganate of potash and maté (Paraguayan tea). He says the permanganate possesses an alterative action upon the liver cells and regenerates the hæmatoblasts, while maté is trophic and neurosthenic, owing to its abundant salts of potash and magnesia and combined choline. Yet it is in the comparatively benign form of hepatic or gouty diabetes that these powerful remedies are able to manifest their efficacy, although they are far from useless in nervous and pancreatic diabetes "so commonly regarded as beyond the reach of remedies."

R. J. Williamson. *Changes in the posterior columns of the spinal cord in Diabetes Mellitus. Brit. Med. Journal*, 1894, Vol. i., p. 398.—In these two cases there were no signs or symptoms during life to point to disease of the posterior columns. The first had some wasting of the muscles about the shoulders and some tingling of the fingers, but definite anæsthesia or analgesia, his knee jerks were at first absent but afterwards returned. In the second case the knee jerks were persistently absent, and during the last few days of life there were slight pains in the legs, chiefly about the ankles and soles of the feet. In the former case the spinal cord, after hardening on Müller's fluid, exhibited to the naked eye marked pallor of the posterior columns in the lower dorsal region, confined to the posterior median columns in the lower cervical region and to their posterior two-thirds higher up; but under the microscope there was very little increase of neuroglia or atrophy of nerve tissue, though a few fibres were swollen or degenerated, and the myeline in places reduced. The nerve cells were generally pigmented, and in parts—chiefly those of the inner group—atrophied. The nerve fibres going to the atrophied muscles were quite normal. In the second case the appearances were practically the same. In three other cases of diabetes they were looked for, but were not found. These changes, which have been before described by Sandmeyer and Leyden, resemble the conditions observed in pernicious anæmia by Minnich. The author compares them to the early stages of sclerosis, described by Tooth, six days after section of the cord. It is notable that in the second case the knee jerks were absent, but the branches of the anterior crural nerve to the rectus femoris were quite healthy; however, in this case the pallor of the cord and the evidences of slight degeneration began as low down as the middle lumbar region, and may be regarded as accounting for the loss of knee jerks.

K. Grube. *Ueber das Verhalten des Patellar-reflexes bei Diabetes mellitus.* *Neurol. Cbl.*, 1893, No. 22.—Grube has tested the state of the patellar reflex in 131 cases of diabetes, and found it normal in 113, increased in 5, diminished in 13. Of the latter four were severe cases and nine were slight, so that he concludes that it has no prognostic significance.

H. Hildebrandt. *Ueber eine Wirkung der Piperazin und seinen Einfluss auf den experimentellen Diabetes.* *Berl. klin. Wochr.*, 1894, No. 6.—Hildebrandt recommends piperazin in diabetes, mainly on theoretical grounds, as this drug diminishes the activity of diastatic ferments without lessening the alkalinity of the body fluids. He obtained good results in phloridzin diabetes of dogs, but apparently has not used it in any case of human diabetes.

W. Hale White. *On the Effect of giving Lævulose and Inulin to patients suffering from Diabetes mellitus.* *Guy's Hosp. Rep.*, Vol. 50, p. 132.—The author alludes to the experiments of Minkowski on dogs rendered diabetic by extirpation of the pancreas which showed that lævulose and inulin are largely stored up or utilised in the organism of such animals and are not for the most part excreted as sugar. In 1874 Kulz had shown that inulin and lævulose were assimilated by diabetics, and more recently the subject has been taken up by Prof. Leyden, who has used a preparation of lævulose made by Schering and Glätz, of Berlin. Experiments on diabetics showed that from 20 to 60 grammes of this sugar could be taken daily without increasing the excretion of sugar. Hale White has used this lævulose and the treacle-like substance sold by Allen and Hanbury; he has also given inulin in the form of dahlia tubers, which contain about 10 per cent. of this form of starch. They should be boiled for about four hours. He found that the lævulose was excreted in part at least as such, the total amount of sugar was always increased, while the quantity of urine was generally augmented. The quantity of lævulose given was from 200 to 1800 grains daily, and the amount of sugar excreted was not proportionately increased, so that he believes some of the lævulose was retained and utilised; it in no case did any harm, and in some instances was followed by gain of weight and general improvement. On the other hand, dextrose and cane sugar though sometimes not followed by bad results often did harm.

C. Manchot. *Ueber Melliturie nach Chloralamid. Virchow's Archiv*, Bd. 136, Heft 2, p. 368.—It has been long known that the urine of patients taking chloral may reduce Fehling's solution, and Schmiedeberg and Meyer showed that this is in some cases glycuronic acid; but Levinstein * proved that true glycosuria may occur, the sugar fermenting and rotating polarised light. Manchot, in the present paper, relates two cases in which chloralamide was followed by glycosuria, proved by fermentation and the phenyl-hydrazine test; but the dose was very large—from 6 to 9 grammes (90 to 135 grains). Experiments on a rabbit weighing 2,150 grammes showed that glycosuria did not occur until the dose reached 1·75 grammes (26 grains), equal to a dose of 900 grains for a man. The glycosuria is transitory in both animals and men, and the dose required is obviously very large.

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* Zur Pathologie der acuten Morphium—und acuten Chloral—vergiftungen. *Berl. klin. Woch.*, 1876, No. 27.

BRIGHT'S DISEASE.

C. A. Hertee. *A Critical Review of the various theories of Uræmia based upon original experimental observations.* New York Neurological Society. The *Medical Week*, Vol. 2, p. 195.—The author criticises somewhat superficially the various theories that have been put forward, except that relating to urea, which he appears to adopt, at least so far as certain gastro-intestinal phenomena are concerned. These he has produced in animals by introducing pure urea into their circulation, so that he considers that vomiting and diarrhœa in kidney diseases are due to the specific effects of urea; but he cannot offer any explanation of the cerebral symptoms.

Teissier and Frenkel. *Treatment of Bright's Disease with Renal Extract.* The *Lancet*, 1894, Vol. i., p. 1405.—The Paris correspondent of the *Lancet* reports that MM. Teissier and Frenkel, of Lyons, have been experimenting with renal extract in the treatment of chronic nephritis. The extract was made by triturating kidney substance with a ten per cent. mixture of glycerine and water. The extract is injected subcutaneously, and the dose employed was 2 cc. once, and afterwards twice daily. The result was said to be improvement in the general condition of the patient with increased toxicity of the urine.

MISCELLANEOUS.

Lee Dickinson. *Transient Hæmoglobinuria from Muscular Exertion.* The *Lancet*, 1894, Vol. i., p. 1249.—At a meeting of the Clinical Society three instances of transient hæmoglobinuria were described in healthy young men, in two instances after foot races, in the other after a game of lawn tennis. The blood was healthy. No reference to possible chilling of the surface after the exercise is made by the reporter.

G. M. Sternberg. *The Bacteriology of Pyelo-nephritis. Cong. of Amer. Phys. and Surg. The Med. Week*, Vol. ii., p. 292.—Ascending nephritis or pyelo-nephritis is often secondary to long-standing cystitis. The bacillus coli communis is found in these cases more frequently than any other organism. Occasionally it may be due to the presence of other organisms, but in the great majority it is due to the one above named.

Hurry Fenwick. *Cholesterine Cyst of Kidney.* The *Lancet*, 1894, Vol. i., p. 23.—At a meeting of the Pathological Society a sacculated kidney was shown, in which the ureter was partially obstructed by a calculus. The cyst was an enormously dilated calyx shut off from the cavity of the renal pelvis, and containing a large quantity of clear fluid glittering with crystals of cholesterine.

L. Emmett Holt. *Acute Pyelitis in Infancy.* Congress of American Physicians and Surgeons. The *Medical Week*, Vol. ii., No. 26.—The author relates three cases of acute pyelitis in young infants, which supervened without apparent cause and were attended by high fever, and pus in the urine. All recovered after some weeks. In the discussion which followed, doubts were expressed as to the diagnosis, and it was suggested that neither cystitis nor suppurative nephritis had been excluded. The urine seems to have been acid, and to have been free from excess of mucus.

T. Harris. *Method of Preserving Organic Urinary Deposits.* The *Lancet*, 1894, Vol. i., p. 1,140.—A preservative fluid consisting of potassium acetate, sixty grammes; chloroform, ten cubic centimetres; distilled water, one litre; is poured into a tube, five-eighths of an inch in diameter, of which the lower end is drawn out like a burette; the sediment is taken up with a pipette and dropped into the top of the tube, which is then closed with an indiarubber cork. The sediment settles to the bottom of the tube, and can be forced out into a glass cell by pressure on the cork; the cell must then be hermetically sealed. Such preparations have lasted two years without change.

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

The sixth meeting of the session was held on Thursday, March 14th, 1895. Present: The President, Mr. H. **LANGLEY BROWNE**, in the chair, and 28 other members.

The following were elected members of the Branch:—Matthew Johnston, L.R C.P., M.R.C.S., of Bewdley; H. W. Pooler, L.R.C.P., M.R.C.S., of Great Brook Street, Birmingham; and W. A. Marris, M.B., of the General Hospital, Birmingham.

It was resolved that the warm sympathy of this Branch be expressed to the Cork Branch in the course it has taken with regard to medical clubs and societies.

Nominations were received for the posts of President-elect, Treasurer, Honorary Secretaries, Council, and Representatives in the Council of the Association.

The following living cases were shown.

Temporal Sphenoidal Abscess.—Mr. F. Marsh showed a man, æt. 30, whom he had trephined for abscess of the temporo-sphenoidal lobes on January 19th. The patient had made a rapid recovery. Detailed notes will be published.

Laryngeal Stenosis Cured by Intubation.—The patient, a boy aged 4, was admitted under the care of Dr. Malet with urgent symptoms of laryngeal obstruction of a week's duration, for which Mr. Cholmeley immediately performed tracheotomy. The isthmus of the thyroid being high up, it was found necessary to divide the cricoid. He progressed favourably, without pyrexia, but was quite dependent on the tracheal tube. A fortnight later an attempt was made to pass a laryngeal probe and intubation tube, but the glottis was funnel-shaped and would not admit it. The probe could however be passed through the tracheal wound and through the larynx, and he could then cough through the larynx, but not inspire.

About seven weeks later, his condition being nearly the same, Mr. Cholmeley passed a small Lister's sound into the larynx through the tracheal wound, and dilated the larynx up until he could introduce the smallest intubation tube. This was changed in a week for the next size, the tracheal wound having healed, and the full size, for a four-years-old child, inserted three days afterwards, which he wore for three weeks, being removed for cleaning once a week. On final removal he could breathe quite readily through the larynx, and phonate loudly.

For a month there has been no recurrence of symptoms, and he appears to be quite cured of absolute dependence upon a tracheotomy-tube.

Congenital Inguinal Hernia; radical cure.—Mr. J. T. J. Morrison showed a man, aged 32, on whom he had operated twelve days previously for a swelling of the left half of scrotum and corresponding inguinal canal Patient had for many years thought the left testicle was larger than the right, but the enlargement gave rise to no inconvenience. About four months before admission, after unusual exertion, the swelling became larger and continued to increase for several weeks, a dull pain, intensified by manipulation of the parts, being experienced at the same time. He was positive that the increase of size took place gradually and not suddenly. The bowels were regular, and the general health remained good. The swelling was as large as a medium-sized cocoanut, pyriform, elastic, non-translucent, and covered by uninflamed skin. There was an obscure impulse on coughing, and the swelling presented irregularities of surface suggestive of omentum. Mr. Morrison considered the possibility of new growth of the testis, but thought the evidence was against that view, his diagnosis being omental hernia, and probably a thickened tunica vaginalis.

At the operation, on March 2nd, a tightly-packed mass of great omentum, weighing 14 oz., was removed from a congenital inguinal sac, in which it lay in contact with the compressed testis. After reduction of the ligatured omental stump, the sac was stripped from the canal and tied at the internal ring. Finally, the redundant part of the sac was removed, and the edges of the lower portion united by a continuous catgut suture so as to constitute an artificial tunica vaginalis. The wound healed very quickly, and the patient was shown in excellent health.

Mr. J. W. Taylor read a paper on a case of Loreta's operation.

PATHOLOGICAL AND CLINICAL SECTION.

The Fifth Ordinary Meeting was held in the Medical Institute on Friday, March 29th, 1895, the Chairman, Dr. MALINS, presiding.

Dr. Codd showed three specimens.

Case 1. *Apparent Myxœdema*, with hæmorrhage into centrum ovale and aneurism of internal carotid close to bifurcation into anterior and middle cerebral. Admitted under Dr. Totherick with history of failing memory, difficulty in performing simple actions, and in speech, sensation of cold in extremities, and swelling of face. Symptoms of six months' duration. The face was of myxœdema type, with thick swollen eyelids and lips. Hands not affected. No cerebral signs noted. Kept in bed without treatment for observation. On the fifth day after admission had twitchings in left arm and face, became unconscious and soon died.

On removing the brain, an aneurism of the left internal carotid artery was seen, just as it emerged through the dura mater by the anterior clinoid processes. It was cut across in removal. The posterior perforated spot and optic tracts were pressed out flat through distension of the third ventricle. The lateral and fourth ventricles and the iter were also distended with blood. The greater part of the white substance of the right frontal lobes was occupied by a large hæmorrhage which had burst into the anterior cornu of the right lateral ventricle, and the right caudate nucleus was pushed back. The basal arteries of the brain and the aorta were atheromatous. The radials and posterior tibials, though thick, were not. The pituitary was of normal size and did not appear to have suffered naked-eye change. The thyroid was of normal size and appearance, but on section was seen to present excess of cellular element.

In view of Dr. Audriezen's researches on the morphology and function of the pituitary body, that it acts during embryonic life like the molluscan osphradia, secreting a substance to influence the nutrition of the primitive nerve tube, and that even in adult life it still exercised a trophic influence on the nervous system, it seems reasonable to suppose that this aneurism, pressing upon the pituitary body, interfered with its function and so produced the symptoms referred to.

Case 2. *Cirrhosis of Liver* of conglomerate form in a boy aged 13, admitted under Dr. Malet; and it was stated that he had always had an enlarged abdomen, and that his voice was never clear. Six days before admission he began to have cough and anorexia, but then improved; but on being brought up from Willenhall in a tram, was affected by severe dyspnœa. On admission, it was noted in addition that he was hoarse, but had no stridor. The abdomen was very large, and contained much fluid. Liver and spleen enlarged. Consolidation at right base. Two pints and a half of fluid withdrawn from abdomen immediately.

On the third day after admission, developed laryngeal stridor with obstruction, for which Mr. Cholmeley performed tracheotomy with only partial relief, and he died next morning.

Post mortem, the larynx was œdematous, and no membrane was present. There was hepatisation of the lower lobe of the right lung. Spleen weighed 18 ozs Liver weighed 3 lbs., and presented a number of very deep sulci lying between many well-marked knobs or projections. The surfaces of these latter were quite smooth, and the whole organ had a fanciful resemblance to a conglomerate stone, or an ovarian multiple cyst. The right and left lobes were united by a very narrow isthmus. On section, lobular cirrhosis was found, with proliferation of bile ducts, great engorgement of hepatic capillaries, and advanced fatty degeneration. There was no history of alcohol, but as his mother was a very disreputable character, it is likely that he might have been brought up on spirits, and that supposing him to have had originally the pot-belly of rickets with hepatic and splenic enlargement, and that cirrhosis followed on the rickety enlargement, this sequence may have determined the planes of contraction to take place as they had done in this case, instead of as they do in hobnailed liver.

Case 3. Another example of cirrhotic change in young people, being kidneys removed on the previous evening from a girl, aged 14, showing advanced cirrhosis, weighing 1½ oz. each. The girl was stated never to have been ill until a week before admission, when I saw her as out-patient complaining of anæmic symptoms. The day before admission she developed uræmic dyspnœa, and on admission had scanty urine with five per cent. urea, and died the following day.

Bilharzia Hœmatobia.—Dr. Douglas Stanley read notes of a case of bilharzia. The patient was a man, aged 26, who had lived for two years at Port Elizabeth. A year after his arrival he was attacked by a skin eruption, which he compared to nettle stings Shortly after, he began to pass blood in the urine. He had always been careful about his food and drink, but was fond of bathing. This he did in the sea, the nearest fresh water being a half-mile off—a small river. The water supply of Port Elizabeth was always considered good.

Dr. Stanley gave a short account of the life history, and anatomy of the bilharzia, and one with microscopic specimens.

Carcinoma of Larynx.—Dr. Foxwell showed a larynx infiltrated with a carcinomatous growth which had originated in the left ventricular band. The sub-maxillary glands formed a mass the size of an adult fist. There were no secondary growths. He was admitted for urgent dyspnœa, for which tracheotomy was done, but death came six hours later.

Mr. John W. Taylor read notes of a case of operation for Acute and General Purulent Peritonitis due to perforation of the appendix or cæcum with fæcal extravasation. The abdomen was thoroughly washed out and drained in two situations—the cæcal region from the right flank, and the pelvis from the middle line. The patient made a good recovery.

Mr. Taylor also showed a specimen of Myoma weighing 2 lbs. and 6 oz. which he had removed the same day by "morcellement." The tumour reached for some distance above the umbilicus, but was contained within the dilated vagina. The patient was virginal and the growth had begun to ulcerate.

Professor Allen read a note on "Some effects of Borax as an Adulteration in Milk."

Dr. Short showed a specimen of Hæmorrhage under the Mucous Membrane of the Bladder.

Mr. Morrison showed a patient on whom he had successfully operated for the radical cure of an Umbilical Hernia.

Mr. Eales showed a man aged 42, with œdema of the conjunctiva of the right eye only of two years' duration, which had not been amenable to any treatment.

MIDLAND MEDICAL SOCIETY.

An ordinary meeting of the Midland Medical Society was held on Wednesday, March 6th, Mr. T. F. CHAVASSE, F.R.C.S., President, in the chair.

Cerebral Hæmorrhage with Unusual Symptoms.—Dr. Marris showed the brain from a case of cerebral hæmorrhage which was under the care of Dr. Rickards at the General Hospital. A large hæmorrhage in the left hemisphere had burst into the lateral ventricle and passed down to the medulla. The symptoms were apoplexy, slight rigidity of all limbs with occasional unconscious movements, no strabismus, facial muscles equally inactive, inability to swallow, Cheyne-Stokes respiration, equally contracted pupils, polyuria, and glycosuria. The case was first diagnosed as diabetic coma, and subsequently as hæmorrhage into pons or medulla.

Myoma of the Uterus.—Mr. Chavasse showed a uterine myoma, weighing 9 lbs., which he had removed by abdominal section from an unmarried woman aged 35. The history of growth extended back four years. Numerous adhesions existed, and the pedicle, which was broad, was treated extra-peritoneally by a wire constrictor. Recovery was uninterrupted.

Papillomata of the Larynx.—Mr. George Heaton showed a boy, ætat. 12, with a large valvular growth growing from his left false cord and causing much inspiratory dyspnœa. In addition to the main growth, there were several smaller ones growing from the mucous membrane in the interarytenoid space. The boy had suffered from frequently recurring attacks of croup, and a year previously had had tracheotomy performed for laryngeal obstruction, and wore a tube twelve days. Mr. Heaton proposed to remove the growths by a laryngotomy, and gave his reasons for performing this method.

Dr. Foxwell exhibited a man with a new growth, originating in the posterior mediastinum, which had compressed the main bronchus of the right lung and also that supplying the lowest lobe. The superficial veins of the lower half of the thorax were dilated, especially on the left side, probably from pressure on the smaller azygos as it crosses the spine to join the larger. There was also a large mass of glands in the right supraclavicular fossa. The first symptom of ill-health was noticed at the end of November, 1894.

Dr. Foxwell also showed a boy of 3 with a large liver of very dense consistence, which he considered to be cirrhotic owing to alcohol with which he had been regularly dosed by his parents—spirits as well as beer.

Dr. Leslie Phillips showed three patients. 1. A case of chronic pemphigus of eight months' duration, noteworthy from the very small size of the great majority of its bullæ. 2. A case of phagadænic ulceration of the penis in course of repair after the free application of the Paquelin cautery. And 3. A man discharged from the army in India on account of syphilis. One side of the nose had been lost nineteen months after the primary sore, and much destructive ulceration had attacked the lesions in other parts of the skin. The exhibitor directed attention to the occurrence in his practice at the present time of many cases of syphilis of a severe and intractable type.

Mr. Christopher Martin showed a large sarcoma of the left ovary, successfully removed six weeks previously at the Women's Hospital. The chief clinical features pointing to a diagnosis of sarcoma were—1. The age of the patient (28 years). 2. The rapid painless development of a smooth, elastic, semi-solid mass rising out of the pelvis and springing from the left side of the uterus. 3. The progressive emaciation during the period of growth (eight weeks). 4. The presence of free ascitic fluid in the peritoneal cavity. 5. The marked vascularity of the growth, as shown by the bruit heard on auscultation, pulsation felt on vaginal examination. An hour after the operation Mr. Martin had to re-open the abdomen and re-tie the pedicle, the ligature having slipped. Although put back to bed pulseless, she rallied well and made an otherwise excellent recovery.

Dr. Kauffmann read a paper on "Some Considerations on the Etiology of Tumours." After considering the chief theories of tumour-growth—the embryonic and the parasitic—and the difficulties which suggested themselves in the application of each of these theories, Dr. Kauffmann came to the conclusion that the embryonic theory, as propounded by Cohnheim, was the one which most enforcedly explains the phenomena of the growth and structure of tumours. He further pointed out that an advance in knowledge regarding the etiology of tumours might be looked for in the study of their chemistry.

A discussion followed, in which the President and several members joined.

REVIEWS.

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THE ANTISEPTIC TREATMENT OF WOUNDS.*

We have read this volume with interest as it embodies probably the most recent views of our leading German contemporaries upon the perennial and all important subject of wound treatment. It is an account in full of the methods practised in the clinic of one of the leaders of German surgery, and is published with a short preface from the pen of von Bergmann himself.

The fundamental principle of aseptic surgery is identical with that of the more familiar antiseptic method; the one aiming at the exclusion of living germs from a wound, the other at securing the destruction of living germs which may perchance have found their way into a wound. Sterilisation is the pivot upon which both systems turn; it is the key-note of the one as of the other, although many of the details of its practical application differ in the two methods.

Aseptic surgery is a natural corollary to Listerism, involving no new principle, implying no fresh discovery; and whether pathogenic germs of wound infection enter the body from the air—as Lister originally thought—or by direct contact with external things—as we now believe—matters but little so far as the primary underlying principle of the modern treatment of wounds is concerned.

In illustration of some of the errors of belief of the early Listerians as to the infectivity of the air, a few passages from Schimmelbusch may be quoted. He says "many, even now, when they smell the disagreeable odours of a decomposing fluid, find it difficult to rid themselves of the idea that germs are being given off with the vapours, and yet all the researches directed upon this point have shown it to be untenable. The evil-smelling air contains much fewer germs than that which we breathe in as pure and pleasant, and the stinking atmosphere of water closets, sinks, and sewers is uniformly found to be purer bacteriologically than the air of streets, dwellings, or gardens;" and again, "the contamination of the air of a crowded room is a process in which micro-organisms play no part, and is due rather, like the foul air in sewers, to the presence of gases." "The lungs give off no germs at all from their moist surfaces; they act rather as a filter, and the expired air could only become a vehicle for germs if sputum, mucous secretions, or even particles of tissue were coughed out with it. The number of bacteria in a crowded room is, as Strauss insists, diminished by the act of respiration, and a surgeon who operates in a theatre thronged with students stirring up dust, may take consolation from the reflection that every student with each breath renders some 500 cubic centimetres of air free from germs. The surgeon need have no fear of infecting a wound by his breath, nor of a septic patient's breath filling the ward with infectious germs."

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* The Antiseptic Treatment of Wounds. By Dr. C. Schimmelbusch, Privat Docent and Assistant Surgeon in Prof. von Bergmann's Uuiversity Clinic at Berlin. Translated by A. T. Rake, M.B., F.R.C.S. London; H. K. Lewis. 1894.

Recent investigations have shown that the germs of wound infection are, generally speaking, quite different from those of ordinary putrefaction, and "it appears from the latest reports that while the air is an uncongenial resting place for any bacteria, it is particularly so for the germs of wound infection; and that those which unavoidably get into it quickly perish." The only thing therefore that must be done in order to avoid a possible infection by the air, is to guard against immoderate stirring up of dust, and the best means of rendering the air of an operating room free from germs, is to keep the room shut for several hours till all the germs have sunk to the ground.

Chapter III. is directed to showing that the diseases of wounds have a purely local origin, due to bacteria altogether foreign to the healthy body, which are introduced from outside, that there is no such thing as progressive suppuration without micro-organisms, and that all the problems of wound infection are not yet solved.

The author's views on the important matter of disinfection are interesting and of great value. He believes that "the removal of germs by mechanical means should come first of all the methods of disinfection," and of the germicidal agents heat, in some form or other, is really the only one on which strict reliance can be placed.

The chapters on disinfection of the body and sterilisation of instruments, dressings, etc., are written at great length, and illustrated by the apparatus in use at the Berlin Clinic. The sections devoted to aseptic sutures and ligatures, drainage-tubes, and sponges are full of practical points, and every line deserves careful notice. The same may be also said of those on the aseptic use of hypodermic and aspirating needles, and on aseptic principles applied to the passage of catheters and bougies. The sterilisation of fluids for washing and irrigation, and the aseptic management of operating and sick rooms are dealt with in separate chapters, and appeal strongly to the common sense of the practical surgeon.

The chapter on aseptic operations and wound treatment contains a detailed description of an amputation of the breast by von Bergmann, commencing with the preparation of the patient before operation, and going through, step by step, to the complete healing of the wound. We are particularly interested with this account of von Bergmann's method, because it is practically identical, in most of its leading features, with that pursued by the reviewer during the past fifteen years. The essentials of successful wound treatment are asepticity, hæmostasis, drainage, dryness, accurate coaptation, rest, position, pressure, and non-interference. Schimmelbusch regards asepticity as the most important of these factors, and, in the main, we agree with him ; but whether this theoretically perfect asepticity is always secured in every-day surgical work is a matter of opinion. We are inclined to think it is not; and yet our wounds do well if the other above-mentioned factors are borne in mind. In speaking of the results of this aseptic method, the author says, in proof of its reliability, that "in a city with a population of over a million, bullet wounds and compound fractures are by no means rare; and yet in von Bergmann's clinic there is no case on record in which a simple bullet wound or a fracture with a small wound has not healed in a short time and without complication under the aseptic sealed dressing." The value of such a statement depends entirely on the meaning of the terms a *simple* bullet wound and a fracture with a *small* wound; it cannot apply to the ordinary run of bullet wounds and compound fractures as met with in civil life.

A bibliography of nearly twenty pages completes the volume, and bears testimony to the labour given to the production of the work by its author. We heartily recommend this book to the notice of our readers as being, in our opinion, the best hand-book in the language on the subject of the modern methods of wound treatment.

A TREATISE ON THE DISEASES OF THE EAR.*

THIS volume, consisting of some 700 pages, follows the lines of the standard works on the ear in the classification of its diseases; but the affections of the nose and pharynx receive, and rightly, far more attention than is usually given to them. The writer goes even fully into the removal of tonsils as an essential in the successful treatment of some types of deafness, and describes clearly the method of removal of the gland, with the mode of arresting hæmorrhage should it become troublesome. This chapter will well pay perusal even by those who are accustomed to frequently perform the operation.

The following subject may be read with interest, particularly at the present time:—Influenza and Diseases of the Ear; and so, too, should the chapters—which are not found in the ordinary text-books—viz., ***Diseases of the Ear associated with Typhus, Typhoid Fever, and Smallpox; Life Assurance and Diseases of the Ear; Simulated Deafness; the Austrian and Prussian Regulations with regard to the Hearing of Recruits.***

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* A Treatise on the Diseases of the Ear, with the Treatment of the Affections of the Nose and Pharynx which conduce to Aural Disease. By T. Mark Hovell, F.R.C.S. Edin. London: J. and A. Churchill.

We are surprised to learn that the author considers that for the examination of the membrane the best form of speculum is that which is known as Brunton's. We do not agree with him, and think that it is far from being the best speculum to put into the hands of a beginner. We remember only one surgeon who worked with Brunton's speculum, and he seemed to be for ever at sea in his diagnoses. Mr. Hovell advises that when an accumulation of cerumen does not come away readily on syringing the mass should be gently moved by means of a chromic acid carrier or probe. We think this rather injudicious advice, and more likely to do harm than good in inexperienced hands, for a mass which is loose enough to be moved by a probe only needs a little further patient syringing to come away.

In the article on ***Foreign Bodies in the Ear***, the sharp hook is recommended for the extraction of certain bodies. We are of opinion that the only instrument a practitioner should use, under any circumstances, is a syringe. Nine out of ten cases of troublesome foreign bodies in the ear are due to meddlesome attempts at removal by means of forceps, hooks, and other instruments, in lieu of the only safe and satisfactory instrument for foreign bodies—the syringe.

The subject of adenoid growths in the naso-pharynx forms a comprehensive chapter, which is carefully and well written. The much debated and vexed subject of the anæsthetic to be used receives a large amount of attention. We agree with the author that for adults ether is to be preferred to any other anæsthetic, but we totally disagree with him that it is preferable to chloroform in children. Experience teaches us that ether for patients under the age of fifteen is not so safe an anæsthetic in these cases as chloroform, provided that the administration is carried on with such care as not to destroy the cough reflex.

One point cited by Mr. Hovell in his objections to chloroform demands attention—viz., "*the greater liability to secondary hæmorrhage when the circulation becomes brisk with returning consciousness.*" On what authority does the writer make this statement? Is it from practical experience, or is it the outcome of some pet theory? We have operated under chloroform for a number of years, and we may safely state that we have not met with a *single instance* of secondary hæmorrhage, nor have we ever heard of a case in the practice of other surgeons. If Mr. Hovell bases his reasons for selecting ether in preference to chloroform on such shallow ground as this, he cannot expect us to attach much weight to his conclusions.

We thought that the suggestion—put forward with so much vigour in some quarters—of operating by the finger-nail had died of ridicule, but we were mistaken. Still the author limits this mode of operating to growths which are "small, soft,, and few in number." Is it not necessary to keep one's nails inconveniently long for such a purpose? and is it not well to caution those who attempt this method of operating to keep them clean? We wonder whether the author has ever seen "large fibrous growths filling up the meatus" disappear under alcohol, for he tells us that this treatment is adapted to such a condition.

Space will not permit us to enter into a more detailed criticism of this work. The author has spared no pains in bringing the book up to date, and he has well succeeded in his efforts. We can safely recommend this volume as one of the best works on diseases of the ear which has been written by a British surgeon.

ABDOMINAL TUMOURS AND ABDOMINAL DROPSY IN WOMEN.*

We have rarely suffered more in the discharge of our duty as reviewer of books than in reading through this volume. Why it is modestly entitled a work on certain conditions "in women" when nearly half of its contents might apply equally well to men, the author perhaps might be able to tell us. It is a book of the poorest kind, containing nothing new, nothing original. It is made up of twenty-six chapters, which read like clippings from standard text-books—not all of even recent date—interlarded with badly taken and imperfect notes from the author's own practice. We fail utterly to see how it can be of any service either to the student or the practitioner in the diagnosis or treatment of abdominal swellings.

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* Abdominal Tumours and Abdominal Dropsy in Women. By James Oliver, M.D., F.R.S. Edin.; Physician to the Hospital for Women, London, etc. London: J. and A. Churchill. 1895.

The chapters on the tumours *peculiar* to women constitute perhaps the best part of the book, because in this department the author has apparently had the greatest personal experience. His views on pelvic hæmatocele are ancient, and he scarcely makes reference to ruptured tubal pregnancy as a cause of this condition. He makes no mention at all of tumours formed by distension of the Fallopian tubes, and clings to the old ideas of pelvic cellulitis as taught twenty years ago. He describes perityphlitis as an "inflammation of the cellular tissue located between the ascending colon and the iliac fascia," due in "the majority of cases" to disturbances originating "in the cæcum or ascending colon," and makes no mention whatever of the peritoneum or vermiform appendix in connection with swellings in the right iliac fossa. The several varieties of hernia are discussed in four pages, and a whole treatise on "Tumours produced by the Liver" is condensed into the following twelve.

A good example of the kind of matter with which the volume abounds is furnished by the section on "Dilatation of the Pancreatic Duct," the "physical signs" of which, according to the author, are "a swelling located in the epigastrium, and fixed. It may be rounded or more or less irregular. If large enough, fluctuation can be elicited." We should like to ask Dr. Oliver whether he has ever seen a case of this kind, and whether the "physical signs" were characteristic.

The volume is nicely got up in scarlet and gold, and will answer its best purpose if kept carefully dusted on a bookshelf.

METHODS OF OPERATING FOR CATARACT AND SECONDARY IMPAIRMENTS OF VISION.*

THIS monograph of 77 pages, which is divided into two parts, is not remarkable for lucidness of expression; indeed many of the passages are so confusedly constructed that at times it is difficult to gather clearly what the author means. Evidently little care has been bestowed either on construction or revision.

In an early page the author gives the strength of atropine drops used by him as 4 per cent., while that of eserine is given as 2 per cent. Though these solutions are about four times the strength of the strongest usually employed, no reason is given for this, which leads one to think that possibly he meant to say 4 grs. and 2 grs. to the ounce respectively.

He cuts the eyelashes short, possibly a wise precaution, but one not usually adopted by English surgeons. He attaches great value to a special speculum, to which weights can be attached which are said to remove the pressure of the instrument on the eye, which may be useful if this end is really obtained. He advocates an eclectic method in operating, only performing iridectomy (1) in large nuclear cataracts, (2) when there is irritability of the cornea round its edge, (3) if there is evidence of glaucomatous tendency in the eye or its companion, (4) if the iris presents in front of the knife. In excision of the iris he recommends the blades of the scissors to be held parallel with the section instead of at right angles to it, as we think preferable; while before extending the lens, he everts the upper lid, which must increase the danger of rupture of the hyaloid, and in favour of which no reason is, or, we imagine, can be given.

He seems to have an undue dread of retained cortex, and a remarkable faith in the efficacy of the internal administration of hydrarg. c. creta, and potass. iodid. and Dover's powder to promote its absorption and prevent intra-ocular inflammation. He says: "I make it a rule to give small doses of grey powder combined with Dover's powder at the outset of any case in which there is the least suspicion of impaired vision. I am thoroughly satisfied of its extreme value after cataract operation. If not pushed to Ptyalism, I do not see why it should not be used after every case of cataract operation as a preventative of complications in cases which present the very least suspicion of an unsuccessful result."

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* Methods of Operating for Cataract and Secondary Impairments of Vision, with results of 500 cases. By Surgeon-Captain G. H. Fink, H.M. Indian Medical Service.

The writer frequently performed double extraction, and thinks "they were in no way discouraging," although in three cases out of ninety-eight both eyes were lost by suppuration; but bearing in mind that suppuration is generally an accidental occurrence, which would rarely happen to both eyes if the operation on each was done at a different time, we hardly think most surgeons will endorse this opinion, having regard to the awful consequence to the patient of the total loss of both eyes; nor do the results in other respects compare favourably with those obtained in his own hands in the cases of single extraction. As the only results given in the tables are cured, relieved, and discharged otherwise, whatever these statements may mean, it is difficult to form an opinion how far his results compare favourably with those obtained by others.

The second part of the book deals chiefly with posterior capsular opacity, which, for reasons hardly conclusive, the author prefers to designate as "hyaloid cataract." Of the pathology of this cataract he holds peculiar views not clearly justified by the facts; and he strongly advocates that this opacity, when present, should be ruptured by the cystatome at the time of extraction, a procedure which most surgeons would condemn because of the certainty of escape of vitreous being thereby occasioned; while there is no evidence, presumptive or otherwise, that by this procedure any better results are obtained than by a subsequent capsulotomy, as practised by most in such cases.

This part of the book is largely swelled by repetitions of statements made in the first part, which might therefore with advantage be omitted, and the work thus reduced in size. The book can hardly be considered a valuable contribution to the literature of cataract extraction.

DIAGNOSIS, DIFFERENTIAL DIAGNOSIS, AND TREATMENT OF DISEASES OF THE EYE.*

This book, of 86 pages, consists of tables giving the symptoms of each disease in one column, while in a column opposite are given those of the disease for which it may be mistaken, the diagnostic symptoms being printed in small capitals to distinguish them from those of less diagnostic value.

In the preface the author states, "They are designed more especially for the busy practitioner who does not claim to be an ophthalmologist, or even well posted on diseases of the eye." Yet we find that not only is the ophthalmoscope necessary to observe many of the phenomena given, but even such complex and expensive instruments as the perimeter and Javal and Sciotz ophthalmometer are required—hardly likely to be used by the busy practitioner we should think. The statements under "Treatment" are most meagre and unsatisfactory.

This is a cram book of the worst type, of no value to the ophthalmologist, and very little use, we should think, to the practitioner, or even the student.

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* Diagnosis, Differential Diagnosis, and Treatment of Diseases of the Eye. By A. G. Adams, M.D., Assistant-Surgeon to Manhattan Eye and Ear Hospital, New York, etc.

INFANT FEEDING BY ARTIFICIAL MEANS.*

THE impression produced by a careful perusal of Mrs. Sadler's book is that it deserves to be re-written. A small book dealing with the feeding of infants is certainly wanted, but we think its style must be different from that of the present volume. Mrs. Sadler has erred on the side of over-conscientiousness in quoting chapter and verse for nearly every statement she makes. This may be safe, but it is very irritating for her readers. Isolated sentences taken from various writers and strung together do not convey to the reader the same impression that the compiler experiences after reading the context in order to make the selection. This point has been overlooked. Take this paragraph quoted verbatim from page 147 :—"Referring to 'the presence of large curds in the intestines' as causing 'in the first few months of infancy the simple form of diarrhœa,' Dr. Angel Money writes (*Disease in Children*, second edition, p. 55)—'To prevent the formation of these lumps, isinglass will effect the purpose.' Dr. Money gives us the quantity to be used—'a teaspoonful or more of the jelly according to the quantity of the meal' (*Ibid.*, p. 231)" Surely the authoress does not really think that this paragraph tells us the quantity to be used. Again, the whole section on barley water is most puzzling. We certainly think that any young mother desiring information would put the volume down with a sigh and fly to the nearest cookery book, where at any rate she would find something definite without so many opinions being quoted and amounts specified. On page 79 a table of antacid equivalents is given; but it is not stated to what amount of milk these equivalents should be added—the principal point one wants to know. It is true that on the preceding page an authority is quoted recommending that lime-water be added to milk in the proportion of one to four; but this leaves the reader to work out the corresponding amount for the table, and when that has been done he finds that the proportion of one to twelve is advised in the very next paragraph, followed immediately by a letter claiming that one to eight is a still better ratio. On page 76, however, it is stated that "two to four teaspoonfuls of lime-water to the half pint will suffice and even be more than sufficient." These few examples, out of many that we might quote, will serve to show that if Mrs. Sadler had written more of the text herself and put her authorities at the end where they would cease to worry the reader, the information which the book certainly contains would have been presented in a more available and far pleasanter form. We say this in all kindness, as we feel that the authoress has scarcely done herself justice.

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* Infant Feeding by Artificial Means. By S. H. Sadler. Scientific Press. 1895.

The three sections into which the book is divided deal with cow's milk and its preparations, the milk of other animals, and baby foods of all kinds; the last being really a valuable addition to medical literature. Some of the numerous illustrations are pretty but quite irrelevant; *e. g.*, the two Japanese pictures do not illustrate in the slightest degree the only reference made to that country in the statement that there are no cows there.

It is surprising to find no mention in a book dealing with infant foods of the now well-known "Soxhlet" apparatus for the preparation of milk: but it is even more surprising to note that the writer is presumably unaware of the very existence of unsweetened condensed milk.

SYLLABUS OF GYNÆCOLOGY.*

A WELL-PRINTED book, in good type, in the form of a notebook, interleaved with plain paper for additional manuscript notes. It consists entirely of headings, forming a bald abstract or table of contents of the "Textbook," and has been compiled with three objects in view: first, to be used as lecture notes; secondly, to enable the student more intelligently to follow and remember the lecture; and finally, as a convenient reference for practitioners. The third object will be better attained by a reference through its index to the "Textbook" itself. The more intelligent student will compile his own syllabus while attending the lectures. To the teacher who knows the American Textbook well, this syllabus may be of service in enabling him to remember the details which he has to expound.

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* Syllabus of Gynæcology, based on the American Textbook of Gynæcology. By J. W. Long, M.D. Philadelphia: W. B. Saunders. 1895.

TEXT-BOOK OF HYGIENE.*

This is the third edition of Dr. Rohé's text-book of hygiene. There is a clear and practical account of the various examinations required in public health investigations, and one which will prove useful to students. Several of the chapters relating to soil, sewage, epidemic disease, etc., are well written, and the illustrations are good. Others are unduly short; and the subject of quarantine is not treated in a manner likely to prove useful to students in this country.

Many references are given for more extended study, and at the end of each chapter is a series of questions. Many of these are good; several may be called trivial.

CLINICAL RESEARCH ASSOCIATION.

We have received from the Clinical Research Association of 1, Southwark Street, London Bridge, a small handbook, giving a brief history of the Association from its commencement, and supplying all the necessary details regarding the collecting and transmission of specimens to be examined. The directions are excellently clear and succinct. The scale of fees attached is decidedly moderate. It is evident from the large number of subscribers, and the list contains many distinguished names, that the Association has had a rapidly growing success, and that its work must be well done.

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* Text-Book of Hygiene. By George H. Rohé, M.D. Philadelphia: The F. A. Davis Company.

New Books, etc., Received.

Transactions of the Royal Academy of Medicine in Ireland. Vol. XII. Edited by Wm. Thomson, M.A., F.R.C.S., Surgeon to the Richmond Hospital, Dublin. Dublin: Fannin and Co. 1894.

A Hand-book of Hygiene. By A. M. Davies, Surgeon-Major, and late Assistant Professor of Hygiene at the Army Medical School, Netley. Illustrated. London: Charles Griffin and Co. 1895.

Infancy and Infant Rearing; an Introductory Manual. By John B. Hellier, M.D., M.R.C.S., Lecturer on Diseases of Women and Children in the Yorkshire College. Illustrated. London: Charles Griffin and Co. 1895.

Anatomy and Physiology for Nurses. Compiled by Diana C. Kimber, Assistant Superintendent, New York City Training School. New York and London: Macmillan and Co. 1895.

Dissections Illustrated; a Graphic Hand-book for Students of Human Anatomy. By C Gordon Brodie, F.R.C.S., Assistant Surgeon, North-West London Hospital. With Plates drawn and lithographed by Percy Highley. Part IV., The Abdomen. London and New York: Whittaker and Co.

The Holloway Sanatorium; Ninth Annual Report, for the year 1894.

Royal Institution for the Instruction of Deaf and Dumb Children, Edgbaston, Birmingham. Eighty-second Annual Report. 1893-4.

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BIRMINGHAM MEDICAL REVIEW.
JUNE, 1895.

ORIGINAL COMMUNICATIONS.

THE INGLEBY LECTURES.

LECTURE I.—ON APPENDICITIS.

DELIVERED AT MASON COLLEGE MAY 9TH, 1895.

BY GILBERT BARLING, M.B., F.R.C.S.
CO-PROFESSOR OF SURGERY IN THE COLLEGE.

GENTLEMEN,—

I felt honoured by the Council of Mason College in being invited to deliver the Ingleby Lectures this year, an invitation I gladly accepted, and for which I offer them my grateful thanks. The man whose memory we recall to-day was one of those pioneers in our School of Medicine whom we ought to honour. To the efforts of Dr. Ingleby and others like him, often under difficult circumstances, we owe much of our present prosperity; and I am persuaded that if Dr. Ingleby had lived to see the School of Medicine established as firmly as it now is and in a home so well adapted to its requirements, it would have been to him a source of profound satisfaction.

Considering how I could most usefully employ the opportunity thus afforded me, I was determined in my choice of a subject by the interest that has of late years attached to inflammatory and perforative lesions of certain portions of the alimentary tract. A further reason for my selection was a considerable experience of these conditions afforded me mainly within the walls of the General Hospital.

I purpose to deal first with disease of the Vermiform Appendix; and before trenching upon clinical matters it is necessary that the anatomy of the parts in the right iliac fossa and the pathology of the inflammations in and around the appendix should receive due attention.

The cæcum is that portion of the colon which lies entirely below the junction of the ileum with the large intestine. It occupies very generally the right iliac fossa, but not infrequently it reaches to and extends into the true pelvis, whilst occasionally it may be found to have wandered to the left side of the middle line or to the right side in contact with the liver; and I send round a sketch taken by my House Surgeon, Mr. Bower, which shows the cæcum just below the position occupied generally by the splenic flexure of the colon. Posteriorly, the cæcum in its normal position lies upon the psoas and the iliacus, of course varying considerably according to its distension. It is completely covered by peritoneum, but is not provided with a mesentery. Its size is very variable; but an average cæcum is about three inches in its transverse, and somewhat less in its vertical axis. Continued on to it from the colon are the three longitudinal bands of muscle which, gradually converging, end on the posterior and inner part of the cæcum in the base of the appendix. These bands are of importance to the operating surgeon, because, when he is in doubt as to the exact location of the appendix, he is bound to discover it by following the longitudinal bands to their termination in its base. The anterior band is the most useful for this purpose, being so well marked and presenting so readily.

Opening into the cæcum on its posterier and inner part near to the ileo-cæcal junction is the vermiform appendix. This, originally the apex or terminal portion of the cæcum, remains in man undeveloped. It suffers also displacement, owing to the overgrowth of the front and right side of the cæcum, until instead of being the anatomical apex of the large intestine, it assumes the position I have already mentioned. For this undeveloped remnant man pays a heavy forfeit. The walls of the appendix are similar to those of the cæcum, but some differences exist to which I shall presently refer. As far as the peritoneal coat is concerned the appendix, like the cæcum, has a complete one; at all events the exceptions to this are very rare; but it may happen that owing to a low reflexion of the peritoneum from the colon on to the posterior wall of the abdomen the upper part of the cæcum at the back and the base of the appendix have not a peritoneal covering. It may however for all practical purposes be assumed that the vermiform appendix is an intra-peritoneal organ, that any operation to be practised on it involves potentially the opening of the abdomen, and that it cannot be removed in any other way. The appendix is provided with a mesentery which is continuous with the under layer of the mesentery of the ileum and extends to the right on to the cæcum. The shape of the mesentery is triangular, and in its left or free border a small artery runs, for distribution to the appendix. To the peculiarity of its blood supply by this single vessel part of the instability of nutrition in the appendix, and its tendency to necrotic inflammation may be traced. Another point to be noticed is that the meso-appendix is shorter than the organ it supports, and often produces in it a curved or coiled condition. The muscular coats of the appendix are feeble and ill-developed. It is possible to trace an outer longitudinal and an inner circular coat continuous with those of the cæcum, but fibrous tissue forms the bulk of what are regarded as the muscular coats. The mucous membrane is thick in proportion to the calibre of the appendix and is richly endowed with lymphoid tissue, a circumstance which predisposes to inflammatory processes, and which has much to do with the formation of the dense concretions found here, owing to the infiltration of fæcal masses by salts excreted by the lymphoid tissue. The mucosa is also supplied with Lieberkuhn's glands, but the proportion varies considerably.

The normal position of the vermiform appendix is hard to define, as there are several positions in which it is found with greater or less frequency. The ordinary positions are as follows:—(1) In this, the commonest, it lies to the inner side of the cæcum covered by the ileum and extending obliquely upwards from right to left. (2) The next most common is, when lying still to the inner side of the cæcum, it passes downwards from right to left, reaching to and perhaps extending into the pelvis. (3) It occupies a position to the outer side of the cæcum, running upwards it may be until its free extremity reaches to or even in front of the right kidney. (4) It may be found lying entirely underneath the cæcum, or partly there and partly herniated into certain small peritoneal pouches which I shall presently describe. Other rare positions may be found, as for instance when it occupies the sac of an ordinary inguinal hernia, or some part of the abdomen not the right iliac fossa, the appendix being widely displaced with the cæcum to which it is attached.

The length of the appendix varies much, extreme instances being as short as one inch and as long as five or six; an average, however, is from three to four inches. It has even been described as absent altogether, though this is probably an error, it either having been overlooked because of its being hidden by the results of previous inflammation, or because it has been partly destroyed by the same. The chief point of importance about its calibre is that its orifice where it joins the cæcum may be unusually narrow, and so prevent the escape of inspissated contents. This narrowing has been ascribed to the fold of mucous membrane at the junction which has been dignified by the name of Gerlach's valve. Occasionally the calibre of the appendix is dilated until the part resembles a piece of small intestine. This has been described as cystic dilatation, and is due to narrowing either at the orifice or lower down. Such a condition is, I believe, always due to a previous inflammatory attack. It is not at all uncommon to find a cicatricial stricture in the appendix of patients who give a history pointing to previous trouble in this region. If a stricture forms and the mucosa is left undestroyed in the terminal portion beyond it, we have a ready explanation of the cystic dilatation.

A few words as to the commencement of the ascending colon. It used commonly to be taught that this part of the intestine was provided with a mesentery, until the researches of Mr. Treves, since confirmed by others, showed that a meso-colon here is an exceptional condition, and that though the front and sides of the ascending colon are covered by peritoneum, a certain portion of the posterior surface is uncovered by it, and lies in contact with some loose cellular tissue. It is worth while recapitulating certain points as to the anatomy of the peritoneum in this region, because these have considerable bearing upon the inflammatory conditions arising in the appendix, and modern descriptions are opposed to those formerly accepted. The points I wish to insist on are that the cæcum is not provided with a mesentery, nor does its posterior surface lie in contact with any loose cellular tissue in the iliac fossa; it is simply surrounded entirely by peritoneum, and is capable of considerable displacement from the fossa which it usually occupies. The next point is that the appendix is practically always surrounded by peritoneum, and that the ascending colon generally has no mesentery, and that part of its posterior surface lies in contact with cellular tissue in which inflammatory processes readily spread.

Before dismissing this subject, certain occasional peritoneal pouches round the cæcum require some attention. These are very variable, and the descriptions of them by different observers do not tally. The best account of them with which I am acquainted is that given by Lockwood and Rolleston (*Journal Anat. and Physiology*, Vol. xxvi., p. 130). Two only are of such importance as to require mention here; they are the sub-cæcal and the ileo-cæcal, and they are only found occasionally. The former is a pouch to be seen directly beneath the cæcum by lifting this and turning it upwards in the direction of the ascending colon. Its mouth is about where the cæcum and colon meet, and its cavity extends upwards between the layers of peritoneum reflected from the ascending colon, sometimes for a distance of inches. The ileo-cæcal fossa lies behind the junction of the cæcum and ileum, both of which must be raised and turned somewhat outwards to show its orifice. It is bounded on its outer or right side by the mesentery of the ascending colon, and on its inner or left side by the mesentery of the small intestine. The pouch extends directly upwards between the two folds; it may be as high even as the front of the right kidney. These, or any of the much rarer pouches which have been described, may contain the appendix, the condition being then described as retro-peritoneal hernia of the appendix. If the appendix becomes inflamed in this situation, the mouth of the fossa or pouch is usually blocked by adhesion, and, abscess forming, the pus may extend into the lumbar region, the kidney then perhaps being suspected as originating the suppuration. No doubt in some of the cases where the appendix has been described as absent, it has been concealed in one of these pouches. This should be borne in mind when there is difficulty in finding it, if operation is undertaken during a period of quiescence in a relapsing case.

To render clear the relations of the various inflammatory collections in the right iliac fossa, so much anatomy was necessary.

I turn now to the morbid anatomy and pathology of these conditions. Formerly they were spoken of as Typhlitis, Perityphlitis, and Para-typhlitis. Now the tendency is to drop these names, and to speak only of Appendicitis.

Without defending the use of this term on etymological grounds, there is every justification for its adoption from the pathological standpoint. There is a constantly increasing mass of evidence, obtained partly by operation on the living, and even more conclusively by inspection in the *post mortem* room, showing that in the appendix we have the actual seat of the inflammation which results in the formation of a tumour in the right iliac fossa, possibly of abscess, perhaps of acute peritonitis. The terms Typhlitis and Peri-typhlitis were used for a long time because careless examination overlooked the condition of the vermiform appendix, and even at the present time many prefer to use these terms sanctioned by long use as expressing fairly well the clinical conditions we are called upon to treat What's in a name? says Shakespeare. Not much perhaps so long as we are all agreed upon the nature and characters of the thing meant. But when there is divergence upon these points, and when one name more than any other conveys some definite information about the object we speak of, it is better to adopt it, and for this reason I prefer to use the term Appendicitis. A similar and equally justifiable change in nomenclature has been adopted in the pelvic inflammations of women. What was spoken of as Peri- and Para-metritis is now commonly referred to as Salpingitis, owing to the recognition of the importance of the Fallopian tube. The parallel between the parts played by the Fallopian tube in pelvic inflammations and by the vermiform appendix in so-called Peri-typhlitis is remarkable. Later on I shall point out the influence of catarrh of the cæcum in initiating that of the appendix. This does not alter the fact that it is the appendix in which all our interest centres and that the catarrh of the cæcum alone would give us little concern.

Examining the *post mortem* records at the General Hospital for the past twenty years, I find that there have been 22 deaths directly traceable to inflammation of the vermiform appendix. During the same period, apart from stercoral perforations of the large intestine due to obstruction, which do not concern the question now at issue, I find two cases of primary perforating ulcer of the cæcum with a circumscribed collection of pus as a result. In both these cases the vermiform appendix appears to have been healthy. The cause of these single ulcers is quite uncertain, but it is interesting to note that in one case there were five small simple ulcers in the stomach and three in the pharynx. Two doubtful cases I have not added to either side of the account, though could they be clearly unravelled I believe they would both be classed as cases of Appendicitis. In one of these the post-colic tissues are described as infiltrated with pus extending from the diaphragm to the pelvis, but not a word is said as to the condition of the appendix. In the other an abscess behind the cæcum communicated through an ulcer with the interior of the bowel. It is however quite as likely that this was an appendical abscess which had ruptured into the bowel as that the perforation of the cæcum caused the abscess. There was old matting and adhesion of the appendix which was sharply bent upon itself, and these are changes recognised as often the forerunners of abscess around the appendix. However this may be, we have 22 deaths clearly traceable to disease starting in the appendix, to 2 deaths attributed to primary ulceration of the cæcum, whilst none are traceable primarily to the so-called cellular tissue behind the cæcum. Here is quite sufficient justification for the adoption of the term Appendicitis, and the case is made stronger when it is remembered that the object of many operations performed for the relief of the condition is a formal removal of the vermiform appendix.

Inflammation of the appendix commences from within, probably as a catarrhal condition extending to the lymphoid tissue with which the mucous membrane is so richly supplied. This is doubtless the reason why the incidence of the disease is so considerable in childhood and adolescence. Originating here as a catarrhal inflammation, we have a swollen softened state of the mucous membrane with sometimes a collection of mucus. In the mildest cases the diseased process stops at this point, and so far only a catarrhal appendicitis results. More commonly, however, the outer coats become involved, and the muscle, fibrous tissue, and peritoneum are infiltrated with inflammatory cells; we then have an interstitial appendicitis. The essential point now is that the inflammation is an infective one, and tends to spread from the appendix to the structures lying in contact with it, giving rise to peritonitis. This frequently results merely in the production of a limited plastic peritonitis, with adhesion of intestine and omentum, etc., to the appendix. On the other hand, but more rarely, the inflammation becomes a quickly-spreading one, which, in its severest form, produces a general septic peritonitis. Another result of the infection spreading through the walls of the appendix—a sort of middle course—is abscess formation around it. This may amount only to a few drops of pus, or, if not interfered with, may increase until the collection becomes a large one. In what direction the pus will extend depends upon the position of the appendix. It may be towards the pelvis, down into the thigh, outwards to the iliac crest, or directly upwards behind the ascending colon. In one remarkable case under my own care, pus found its way into the lumbar region, and breaking through here, descended over the buttock, giving rise to a resonant abscess in this situation.

So far I have spoken of interstitial appendicitis without actual necrosis of the walls of the gut. But now I have to speak of those intense inflammations which give rise to actual gangrene or else to perforation of the appendix. Actual gangrene of the appendix is not so common as mere perforation. I have met with it thrice only. In the first case I opened the abdomen of a young child with appendicitis and advanced general peritonitis, removing the appendix. This presented, in addition to general severe inflammation throughout its length, a localised patch of about one-third of an inch in diameter near the free end, quite black in colour. It looked as though it might have been pinched by forceps until it had died, and there was no compressing body inside or outside the appendix to explain the occurrence. (See Case 24.) The second case was in a young man, whose appendix I removed within fifty hours of his seizure, and found that two-thirds of the organ were pulpy and necrotic, again without any explanation, such as the pressure of a stercolith inside or a strangulating band outside. (See Case 15.) Conditions such as these appear to be due simply to the intensity of the inflammation. By the pressure of the inflammatory exudation in the dense unyielding walls of the appendix on the outside of its supplying vessels, and partly from thrombosis inside those vessels, the blood supply to the whole or to part of the appendix is cut off, and gangrene more or less extensive occurs. Perforation may result of course from gangrene such as that I have just described, but it is commonly due to ulceration set up by the pressure of a stercolith or foreign body. The curious thing is that these hard bodies may reside for some time in the appendix without ulcerating their way through its walls. It is only when inflammation has been lit up by some accidental cause that the pressure of the retained body produces ulceration and perforation.

With Gangrenous Appendicitis there is very early, it may be almost immediate, development of general septic peritonitis. The intensity of the infective process and the absence of limiting adhesions explain the fulminating clinical development of the case. With Perforative Appendicitis, on the contrary, although immediate general septic peritonitis is unhappily quite frequent, yet it is not the rule. There is generally time before actual perforation occurs for adhesions to form which prevent general infection of the peritoneal cavity, at all events for a time, and a circumscribed abscess results. This limitation of the inflammatory process is often greatly assisted by the position the appendix occupies, covered as it may be by the cæcum, or lying to the outer side of that part of the gut, or more or less completely inclosed in one of the peritoneal pouches to which I referred in my account of the anatomy of the parts. When abscess has formed, whether from perforation or without it, an extension of infection to the general peritoneal cavity may still take place, but usually this is brought about by the rupture of the limiting adhesions of the cavity.

To sum up these possible changes. We have in the first instance Catarrhal Appendicitis which easily may develop into the interstitial form. Once this has happened, either a limited plastic peritonitis with adhesion results, or a circumscribed suppuration, *i. e.*, abscess, or a spreading peritonitis. When from the intensity of the inflammation in the appendicular walls gangrene results, a fulminating general septic peritonitis is set up very early. If a stercolith or foreign body produces perforation of the appendix a well-defined abscess may form around, or, mainly owing to the position of the appendix, free in the abdominal cavity, general septic peritonitis of an intense kind rapidly follows perforation.

Causation.—What are the factors which set going inflammation in the appendix, with its various possibilities? We cannot always recognise them. The attack may come on in the midst of perfect health, go on to a fatal termination, and the clinical history and the autopsy fail to explain its origin. In other cases we are not so much in the dark. First, because most easily recognised, among the exciting conditions I place the presence of a hard body inside the appendix. Generally, this can be easily made out to consist of inspissated fæcal matter, though sometimes the concretion is so dense and stonelike that, shown apart from the appendix, it might be impossible to tell it from a renal calculus. Occasionally, a genuine foreign body is present—a fruit-stone, a shot, a grain of corn. In what proportion of cases a hard body is contained in the appendix cannot be determined. In a series of cases requiring operation, or examined in the *post mortem* room, it may be almost constantly present; but these are the most severe examples, and perforation very common. In the milder non-perforative cases, which are more numerous than the former, and usually come under the care of the physician rather than the surgeon, we have no data as to the presence of concretions. From the fact that such practically always recover without surgical intervention, we are likely to remain without information, but I infer that stercoliths are not common in the milder types of appendicitis. Where are the concretions formed? An ingenious attempt has been made to show that they are formed in the cæcum, are forced thence into the vermiform appendix, giving rise to intense colicy pain, and a clinical term, "Appendicular Colic," has arisen out of this. Patients who ought most often to suffer from colic of the appendix, if this were true, are elderly people, and women especially; whilst experience shows overwhelmingly that appendicitis is much more common in the young than the old, and in males rather than females. That severe colic occurs there is no doubt; it is a most significant symptom, the importance of which cannot be overestimated. But the inference as to its production and its analogy to renal or biliary colic is, I believe, entirely false; this will, however, be discussed later on. It is certain that fæces enter the appendix and there become inspissated, as in this large appendicular calculus which I show, and such is probably the common origin of these concretions within the appendix. The curious thing is that concretions may exist possibly for a long time without doing harm, when suddenly an acute inflammatory process is ignited and the concretion perforates the walls of the appendix.

This leads me to the second exciting cause, which, whilst not so readily recognised as the concretion, is, I believe, much more common; it is catarrh of the cæcum and ascending colon. Careful enquiry will in a proportion of cases, especially amongst the poorer classes and in children, reveal the fact that the colicy pain follows some hours after a large and indigestible meal, or is due to exposure to cold. This suggests a catarrh of the colon, which, extending to the appendix, sets up swelling of the mucous membrane with increase of secretion. The swollen mucous membrane blocks more or less completely the orifice of the appendix, and the retained and stagnant secretion, always mixed with various putrefactive and pathogenic organisms, decomposes, and we have a simple catarrhal inflammation converted into an infective one. This may become of the most intense description, producing any of the disastrous results to which I have alluded—Perforation, Gangrene, or General Peritonitis. If a concretion exists in the appendix, although it may have been formed and fixed there a long time previously, the infective inflammatory changes I have just spoken of determine the ulcerative process at the point of impact of the concretion, and perforation results. This is the only way in which I can reconcile the facts that a stone-like body is formed in and remains a long time within the appendix without doing harm, and that suddenly this tolerance of the appendix gives place to those changes which result in perforation.

The part played in appendicitis by micro-organisms is not yet clearly unravelled, and at the present time I am engaged in some investigations on this subject. In the contents of the appendix, in its walls and in the abscess or general peritonitis round it, numerous germs may be found, but chiefly the Bacterium Coli Commune. This bacillus is constantly found in the healthy intestine, where it does no harm ; yet, under certain circumstances, it appears capable of invading the intestinal walls and spreading through them to the peritoneal cavity, producing an infective inflammatory process of possibly the most intense kind. What induces this change, that a bacillus usually unable to attack and penetrate the intestinal wall, every now and then appears to acquire this power? The changed condition may be either in the bacillus, in the contents of the intestine, or in its walls. In appendicitis, I believe that a catarrhal process, spreading from the cæcum to the appendix, with retention of the secretion in the partly choked narrow gut, provides conditions of food and rest which invite a luxuriant and it may be malignant development of the bacillus. At the same time, the swollen and succulent mucous membrane is less resisting, and becomes invaded by the organism, and all the worst possibilities of inflammation of this part may follow. To catarrh, therefore, of the large intestine I attribute the initiation of the appendicitis; to the activity of the ordinary colon bacillus the conversion of a simple to an infective inflammation, with all its possible extensions; while the accident of perforation is generally due to a concretion. If such be present, although previously not harmful, the acutely inflamed appendicular walls undergo necrosis from its pressure, and perforation is produced. It must be borne in mind that once the appendix has been inflamed, it is often embarrassed in the future by adhesions from without tying it down in a kinked position, so that its contents cannot easily escape. Or a partial or complete stricture may form, giving rise to retention of secretion, as in this specimen I show you, where the dilatation was so considerable as to produce a cavity holding some drams of fluid. A patient whose appendix has been damaged, more easily gets a further attack than he does his primary one.

As to the influence of age and sex in the production of the disease there can be no doubt. Adolescents suffer most heavily, and nearly fifty per cent. of the cases occur between the ages of 10 and 25. Infancy is not exempt nor is old age. The explanation of the predisposition of young people to be attacked is I believe supplied by Kelynack, who attributes it to the large amount of lymphoid tissue in the appendix and the well-known tendency of this tissue to inflammation in the young. Males are said to suffer about three times as often as females, and for this there is no sufficient explanation forthcoming. My own cases are nearly evenly divided between the sexes.

Typhoid fever has been described as the forerunner of appendicitis, it being assumed rather than proved that the orifice of the appendix becomes involved in typhoid ulceration, a stenosis resulting. The possibility of this can hardly be questioned, but I have only once seen a case in which appendicitis has followed typhoid, and in this there was an interval of five years between the two illnesses.

Signs and Symptoms.—Appendicitis varies extremely in its course and severity, and, consequently, in its treatment and prognosis. Classification into several groups possessing common features is therefore essential to a proper understanding and treatment of the disease; but there are certain features some of which are to be found in all cases, and these I propose to describe before differentiating between the various groups.

First in importance is the onset of the attack. This when carefully investigated will be found to be often so typical as to give the key to the whole position. It may be as characteristic as the commencement of acute pneumonia or scarlet fever. A patient, previously in good health, is seized with abdominal pain of a crampy colicy character. This pain at first is not well defined, but rolls over the whole of the abdomen, and if localised at any particular point this is generally in the neighbourhood of the umbilicus. The pain may be of the greatest severity, and I have seen a patient bathed in sweat and rolling about the bed as in the worst attacks of renal colic. The term Appendicular

Colic has been applied to this seizure, and it is often so characteristic that no exception need be taken to the term. Talamon's explanation of the colic as due to the squeezing of a hard fæcal mass into the appendix from the cæcum is opposed by several facts. There is positive evidence that many stercoliths have long resided in the appendix and that they are produced there by inspissation of fæces. In many cases of appendicular colic no concretion is found; and again the mechanical relations of the appendical orifice to the wall of the cæcum, quite unlike those of the ureter to the kidney pelvis, are such as to forbid the idea that the contractions of the cæcum would drive bodies into the appendix when they could escape by the ascending colon. I attribute the colic myself to a wide-spread reflex spreading through the sympathetic plexuses in the abdomen, and excited by the severe inflammation in the resisting and inelastic walls of the appendix. The seizure is frequently spoken of by the patient as cramp or spasms or a bilious attack. It may last some hours with partial remissions, and is generally accompanied by vomiting. Vomiting at this stage may only occur once, or if repeated is not persistent like that of peritonitis or intestinal obstruction, and the vomited matters consist of the last taken food with admixture of bile. I shall have to refer again at some length to the symptom of vomiting. Here I will only add that persistent vomiting or persistent hiccough are evil signs, as is coffee-coloured vomit from the presence of altered blood. After the wide-spread pain has existed for from an hour to as long as ten or twelve hours the seat of pain will be referred to the right iliac fossa, and examination of the abdomen by palpation will reveal marked tenderness here.

This is the typical onset, and if it were constantly present diagnosis would be rendered so much the easier. Though certainly not constant, it is present in a large proportion of cases, and I am convinced is, not rarely, overlooked. Its value is greatest in the most acute perforating cases because in these it is apt to be most marked and, in these, early diagnosis is essential to successful treatment. In exceptions to the typical attack it may happen that the pain is not diffused at first, but is localised to the right iliac fossa, or that after the diffuse pain has ceased, some part distant from the right iliac fossa is localised as the seat of pain. In a case under the care of my colleague, Dr. Stacey Wilson, a boy had the wide-spread pain, with subsequent local pain in the *left* iliac fossa He died in collapse after a severe exacerbation of pain, and it was found that his vermiform appendix, in the usual situation on the right side, had perforated and given rise to peritonitis. In a case I have recently operated on there was the diffuse colicy pain with vomiting, but pain, if anywhere localised as most severe, was in the *left* iliac fossa. (See case 12). Despite exceptions such as these, the typical onset is most valuable in diagnosis and, when it is atypical, we have the presence of other indications to help us to a correct conclusion. In this early stage Rigor is exceptional, and personally I have only met with it once as part of the onset. Late in the disease, and associated with well-defined suppuration, it is not uncommon to have one or even several rigors if the pus is allowed to remain unevacuated.

Constipation is the rule at this stage and immediately preceding it, although a scanty motion may be passed, and diarrhœa may even take the place of constipation In one of the most intensely septic cases of peritonitis (Case 21) upon which I operated with success, this symptom was present, and in all probability the emptying of the intestine of its toxic contents and the prevention of paralytic distention had much to do with the patient's recovery. I therefore look upon diarrhœa as of favourable import.

The Temperature is almost always elevated at the onset. It may, within twenty-four hours, reach to 102° or 103° F. but a commoner range is 101° to 102°. If the case is a mild one, in two or three days all fever may have disappeared ; if, on the contrary, it is an *acute* perforating case, the temperature tends generally to increase, and on the third or fourth day may have steadily risen from 101° to 103° or 104°. If abscess formation is taking place, the temperature will be raised at night to 101°,

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102°, or more, with a morning remission such as is commonly seen in pus formation in other parts of the body. To this general description of the range of temperature many exceptions may be mentioned. For instance, I show a chart taken from a perforative case in which the temperature fell on the fourth day from 101·2° to normal, and remained so for two days, when perforation into the peritoneal cavity suddenly occurred. In Case 14, at the commencement of the third day of the disease, the temperature fell from 104° to 99°, the other symptoms becoming aggravated; and that day several ounces of fœtid purulent fluid were evacuated from around the appendix. The erratic course taken by the temperature in such cases as I have just quoted has induced some surgeons to declare that the temperature is of little value as an aid to diagnosis. I should put the matter rather in this way—that it is an uncertain guide, and one only to be relied upon when confirmed by other phenomena present. If it presents the paradox of a falling temperature with a quickening pulse, the improvement in the temperature would be a fallacious guide; if, on the other hand, the temperature goes on increasing on the third or fourth day, this is a symptom of serious importance, indicating a severe infection which is extending beyond the locality it originated in. In the differential diagnosis between appendicitis and such conditions as intestinal obstruction or renal colic, the presence of two or three degrees of fever would point strongly to the first-mentioned condition; and for this reason alone the state of the temperature is too valuable to be made little of.

The Pulse is undoubtedly a guide more to be relied on than the temperature. Much quickened, it always is in the acute onset, running from 100 to 110 or more, but subsiding in three or four days, if the case is a mild one speedily to undergo resolution. Otherwise, the rapidity of the pulse remains and may increase, up to 120 quite commonly, and far beyond this if a fatal termination from peritonitis is impending. The quickening of the pulse, despite improvement in the temperature, and it may be in other directions, is a fact of great importance, and the surgeon should carefully scan his patient to see if he has overlooked any other point. In Case 14, referred to just now, with a fall of temperature from 104° to 99° the pulse increased from 114 to 132, and the respirations from 36 to 42. As to the character of the pulse little is to be said, but just this much should not be omitted. Generally the pulse is soft and easily compressible, and remains so even when peritonitis is commencing or well established. There is a tradition that in peritonitis the pulse is hard and wiry, and I have often, when discussing these cases, had my attention drawn to the fact that these characters are absent as an argument against the presence of peritonitis. Everyone has, of course, met with the wiry pulse of peritonitis, but in my experience it is oftener absent than present.

After the severe colicy pain of the onset has passed away and local pain is felt in the right iliac fossa, some general tenderness of the belly may exist with rigidity. As a rule, the limited acutely tender spot in the right iliac fossa can be detected about the point indicated by McBurney, in a line from the anterior superior spine to the umbilicus, about three inches from the former.

This brings me to the question of the presence or absence of a tumour. Some time ago, examining the records of a large number of cases occurring consecutively in the General Hospital, I found that in two-thirds of the cases a distinct tumour was recognised in the right iliac fossa. From my own personal experience, I should say that what is sometimes felt and spoken of as a tumour here is merely the rigid contraction of muscle over the appendix and adjacent parts acutely inflamed and tender. However that may be, undoubted tumour is very common, and is due to thickening and matting of the appendix to the gut and omentum round it, sometimes also to the parietal peritoneum, and to infiltration later into the fasciæ and muscles of the abdominal wall. In this way a most massive swelling may result. In addition to this matting and infiltration, later, pus may be added, making the tumour larger and more definite.

The presence of a tumour, produced in either of the ways indicated, is a common and valuable sign. Where, owing to tenderness and general muscular rigidity, no tumour can be felt, by relaxing the muscles with an anæsthetic, one can pretty certainly be detected, though in the most acute cases it may amount to nothing more than an ill-defined fulness in the right iliac fossa. In only one case (No. 15) that I have operated on have I failed under anæsthesia to find this; and I lay stress on the great value of this method of investigation in young children, who resent examination, and in adults with fat belly walls. This description of the formation and presence of a tumour would be incomplete without a reference to those exceptional cases in which the cæcum and vermiform appendix occupy some unusual part of the abdomen. Should an erratic appendix become inflamed, the irregular position of the point of greatest tenderness and tumour would be very puzzling, yet a few brilliant examples are on record of diagnosis and successful operation of such cases.

Is anything to be learnt by examination per rectum or per vaginam? In a limited number of cases a tumour may thus be felt; but I believe it is exceptional for a tumour thus to be located which cannot be felt through the abdominal walls. Personally I have only once obtained information in this way, when examination of the abdominal walls failed to give it; this was in Case 12. Here bi-manual examination revealed the presence of an inflamed appendix, with adhesion round it, which I could not detect in any other way. From the published reports of cases, it is evident that other observers have reaped greater advantage from bi-manual examination; it therefore should not be omitted as part of a routine examination.

A symptom not to be ignored, though not commonly present, is pain before, during, or after micturition. It is due to the position of the inflamed appendix within, or close to, the brim of the pelvis. The inflammatory process extends thence to the peritoneal coat of the bladder, and as the organ is stretched, relaxed, or contracts, pain is produced. I have met with it in five cases, all males. In one of them retention of urine resulted, which I was called on to relieve, the presence of appendicitis not having been recognised until I detected it. In one of the others the pain connected with micturition was the chief trouble of which the patient complained. Curiously enough, the only patient I have operated on for appendical abscess opening into the bladder, a female, had no trouble in micturition at any time.

The patient practically always assumes the dorsal decubitus, lying as a rule with the legs extended. Exceptionally, the right hip is flexed to relax the muscles and fascia surrounding the inflamed area, and when general peritonitis exists both lower limbs may be drawn up. If the case is very acute, the muscles of the abdominal wall will be fixed more or less completely and will be little used in respiration. This rigidity of the belly does not necessarily imply that peritonitis exists, indeed I have seen it in a marked degree when I have had positive evidence by operation that there has not been general peritonitis. Nevertheless, it is a sign which no prudent surgeon will ignore, as it tells that a severe infection has involved the appendix and that extension to the general peritoneal cavity is one of the results to be apprehended, Distension of the abdomen with rigidity is much more significant of peritonitis, and yet I hesitate to say that the combination of the two certainly indicates the presence of general peritonitis. In three very acute cases (Nos. 14, 15, 16) in which I have operated, all of which recovered, both marked rigidity and distension existed, and I am bound to say I believed that general septic peritonitis was present, the more so as two of them were vomiting frequently. Yet, the cessation of all the bad indications immediately after removal of the vermiform appendix in one case and of drainage of an ill-defined collection of pus around the vermiform appendix in the other two, leaves me in doubt whether I had not diagnosed general extension to the peritoneum when it did not exist.

The patient's face is worthy of study. Early in the disease it is the puckered face of pain, especially in children. As the acute pain subsides the face becomes more restful. If general infection of the peritoneum occurs, we have the flushed face of septicæmia or the pinched, collapsed face which stamps the case as one of severe peritoneal inflammation.

Delirium is not often present, but when there is septic peritonitis, it may be, as in septicæmia from other conditions. There is nothing characteristic about it, but it is of evil prognosis.

ON THE PRINCIPLES AND TECHNIQUE OF STERILISATION BY HEAT.*

BY CHARLES LEEDHAM-GREEN, M.D., HEIDELBERG, F.R.C.S. ENG.

LAST July there appeared in this journal a brief and somewhat abruptly concluded paper, in which I endeavoured to give a general idea of the so-called *aseptic treatment of wounds.* Within the limits of so short a paper it was impossible to discuss the subject at length; and I now propose to treat a little more fully the *technique* of sterilisation.

The whole system of sterilisation by heat is based upon the fact that all forms of micro-organisms are destroyed at certain high temperatures, the degree of heat necessary for their destruction varying with the kind and condition of the organism, and the mode in which the heat is applied.

It is essential first to determine which particular kind of organism we desire to destroy; for we now know that it is not absolutely necessary, as Lister at first supposed, to destroy all the forms in order to the successful healing of a wound, the majority of the forms of bacteria having been proved to be innocuous; moreover, the means at present at our disposal are quite inadequate to such a task. Globig † found spores of one of the potato bacilli capable of withstanding even boiling water for hours together without losing their vitality. Such being the case, it must at once be obvious how impracticable it would be in surgical practice to effect the destruction of all. Happily for us it is quite immaterial whether we destroy all forms of bacterial life or not, so long as we kill those which are prejudicial to wound-healing.

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* A Paper read before the Queen's College Medical Society.

† Zeitschrift für Hygiene. Band iii., 1888.

Micro-organisms may be roughly divided into these two classes—viz., those which are injurious to wounds, or pathogenic; and those which are innocuous, or non-pathogenic. With the latter we have nothing to do; we fear only the following pathogenic forms:—

1. Staphylococcus pyogenes aureus.
2. Staphylococcus pyogenes albus.
3. Staphylococcus pyogenes citreus.
4. Streptococcus pyogenes.
5. Streptococcus eurysipelatosus.
6. Bacillus pyocyaneus.
7. Micrococcus gonorrhœæ.
8. Bacillus diphtheriæ.
9. Bacillus pneumoniæ.
10. Bacillus tuberculosis.
11. Bacillus tetani.
12. Bacillus œdematis maligni.
13. Bacillus anthracis.

Of these the last four produce spores; the others, in the process of development, do not pass through the spore stage. This is important to remember, for it is so much more difficult to destroy spores than adult forms. Measures which are quite efficient in the one case, often prove powerless in the other. *Ex. gr.*, a 5 per cent. solution of carbolic acid will kill the sporeless forms within a minute or two; but days, even weeks, are required to destroy some of the spores by the same means. Any method of sterilisation, therefore, which fails effectually to kill the spores of pathogenic bacteria is unsuitable for surgical purposes. It is customary to experiment with the spores of the anthrax bacillus, one of the most resistant of all the pathogenic bacilli.

As I have said, the temperature at which micro-organisms are destroyed varies with the kind of germ, and the mode of applying the heat.

There are four different ways in which heat may be applied:—

1. By the open flame.
2. By hot air, or dry heat.
3. By steam.
4. By boiling water, or other fluids.

The first of these methods—the open flame,—though extensively used in bacteriological work, could only be employed in sterilising instruments; but, inasmuch as the temper of the instruments is affected by the application of heat, it is unsuitable for surgical use, excepting perhaps with a few special instruments, where the loss of temper consequent upon such a process is immaterial.

The second method mentioned is sterilisation by means of hot air. It is hardly possible to say to whom we are indebted for the introduction of this method. It began to be systematically used about the year 1870, more especially in France, where it is still extensively employed in preference to the use of steam, which has to a large degree supplanted it in other countries. The introduction of hot air was undoubtedly a great advance on the old method of fumigation by sulphur. For a time it was regarded as the ideal agent for the sterilisation of clothes, bedding, and surgical dressings. It was Robert Koch who struck the first blow at the hot-air method, by the publication of the results of an inquiry into the efficiency of the hot-air sterilising apparatus then in use at the Moabit Hospital in Berlin.* He showed conclusively that the sterilising power of hot air had been much exaggerated; and that although a temperature of 120° C. for one hour and a half was sufficient to destroy low vegetative forms of life, it failed to kill the spore-forming bacteria. Indeed it required the temperature to be maintained at 140° C. for three or four hours before some of the spores, such as those of the anthrax bacillus, could be destroyed. As we shall presently see, this is a much longer time and a much higher temperature than is necessary when either steam or boiling water is used. This in itself would be a grave objection to the use of hot air in surgical practice. But there are other disadvantages connected with its employment; one being the difficulty of maintaining a constant and equal temperature in all parts of the apparatus without the use of costly and complicated mechanism. In the apparatus generally in use it is by no means unusual to find a difference of as much as 30 degrees between the temperature at the top of the steriliser and at the bottom. Again, hot air, unlike steam, penetrates closely rolled material with great difficulty, so much so, that if the temperature of the air in the steriliser be as much as 140° C., a thermometer wrapped in a blanket would barely record 80° C. This is an important point with regard to the sterilisation of bedding, for which the use of hot air has been specially advocated; and further, the use of hot air is decidedly injurious to many articles, causing them to become brittle and friable, and, indeed, unless great care be taken, actually scorching them. From these considerations it will be seen that the use of hot air as a sterilising agent is open to very grave objections.

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* Mittheilungen aus dem kaiserlichen Reichs-gesundheitsamt 1881, Bd. I.

The third method is sterilisation by steam. Koch, not content with proving the unsuitability of hot air, sought to replace it by a more efficient agent. This he did, after several experiments, by the introduction of steam.* He found the action of steam to be truly remarkable. It will be remembered that in order to destroy the anthrax spores by hot air it is necessary to maintain a temperature of 140° C. for three or four hours. *But the same result can be more certainly attained by subjecting the spores to the action of steam for ten minutes only.*

Moreover, steam, unlike hot air, diffuses itself with great rapidity, filling every corner of the vessel; and the differences of temperature met with at the top and bottom of the hot-air chamber are not observable when steam is used; so that the same temperature is practically present whatever the shape of the vessel may be. I have remarked that hot air penetrates rolled material with difficulty; steam does so with ease and rapidity. Nor does it injuriously affect the texture of the material. It neither scorches it nor renders it brittle. It would appear therefore to be entirely free from the objections raised against the use of hot air. The only drawback to its use is that it slightly moistens the articles, but this in most cases is quite immaterial and, as we shall see, can largely be avoided.

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* Versuche über die Verwerthbarkeit heisser Dämpfe zu Desinfectionszwechen von Dr. Koch, Dr. Gaffky, ü Dr. Löffler.

In order to insure the entire efficiency of steam certain conditions are indispensable. It will be well to refer to these before considering the various forms of sterilising apparatus to be employed.

The first point to be noted is that the sterilising chamber must be filled with steam *alone*, not with a mixture of steam and air. The importance of this will be readily seen when it is remembered that whilst steam at a temperature of 100° C. is one of the most powerful sterilising agents yet discovered, hot air at the same temperature is of but little value.

In all large vessels where clothing or bedding is to be sterilised, it is desirable to admit the steam at the top of the vessel and to allow the air to escape from below, for although the steam rapidly diffuses itself, if it be admitted at the bottom of the vessel and the outlet be at the top, a stratum of air at the lower part may remain unremoved.

Much confusion still exists in the minds of many as to the value of superheated steam and of steam under increased atmospheric pressure. It was natural to think that inasmuch as air is more powerful as a sterilising agent at a temperature of 150° C. than at 100° C., and at 200° than at 150° (the higher the temperature the more effective its action), the same would hold good with regard to steam; this, however, is not the case. If steam at 100° C. be heated to 150° C., it will, other things being equal, lose in efficiency as a sterilising power. This peculiarity was first demonstrated by Professor Esmarch.* Passing steam through gun barrels heated by gas jets, he was able to raise it to any temperature at will. He found that as the steam rose in temperature it lost in sterilising power, and that above 140° C. its action corresponded merely to that of dry air at the same temperature. This loss of the sterilising power of superheated steam apparently arises from the fact that the increase of temperature dries the steam. The nearer the steam is to its condensation-point (*i.e.*, the damper it is), the easier does it soften and penetrate the resistant capsule of the bacterial spores. It may, however, be remarked that superheated steam can be preserved near to its condensation-point by proportionate additional pressure. Then, so far from being less effective than ordinary steam, it becomes the most powerful sterilising agent we know. One of the non-pathogenic micro-organisms, which has unusual power of resistance, is able to withstand steam under ordinary pressure at a temperature of 100° C. for six hours before it is destroyed, but is killed within a few seconds when subjected to superheated steam under a pressure of three atmospheres.

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* Zeitschrift für Hygiene, 1888.

It is not surprising, therefore, that many attempts have been made to introduce superheated steam under high pressure for surgical purposes; but its use cannot be commended. We remember that the temperature at which water boils depends upon the amount of atmospheric pressure to which it is subjected according to a definite law. At ordinary atmospheric pressure water boils at 100° C. If the pressure of the atmosphere be doubled, the water boils at 120° C.; if trebled, at 134° C. This relation of temperature and pressure must be strictly observed, in order to the maintenance of the sterilising power; for if, for instance, the temperature be unduly increased, the condition of the steam becomes similar to that which Esmarch produced by passing it through heated gun barrels, and is unsuitable for sterilising purposes. If, on the other hand, the pressure be excessive, either the steam in the sterilising vessel condenses, or there is no longer pure steam present, but a mixture of steam and atmospheric air, either of these being unsuitable for our purpose. To obtain this necessary definite relation between the degree of pressure and the temperature, demands the use of complicated and costly apparatus. It is essential that the steam in such apparatus be regulated not merely by the thermometer, but also by the manometer; and it is perhaps needless to say that the use of steam, under high pressure, is not free from danger, requiring the attention of a skilled mechanic. It is therefore plain that superheated steam is unsuitable for ordinary surgical practice. And, moreover, we have already seen that the most resistant pathogenic germs known are with certainty killed in a few minutes by the action of steam, without excess of either pressure or temperature, the use of which is free from these difficulties and dangers.

It is therefore obvious that simple steam is the best agent for sterilising bedding material and surgical dressings; but it must not be used for steel instruments as it causes them to rust. For them we have an efficient agent in boiling water. Even the most resistant of pathogenic spores are destroyed by boiling water within a few minutes. Schimmelbusch found that staphylococcus and bacillus pyocyaneus were killed by its use in from two to three seconds, whilst anthrax spores, which could survive the action of steam for ten minutes were completely destroyed in two minutes by boiling water.

The objection that was raised to its use at first, that it caused steel instruments to rust, has been overcome. Schimmelbusch found that the addition of one per cent. of carbonate of soda to the water effectually prevents rust. Moreover the alkaline solution is itself a valuable agent in sterilising, from its power to dissolve grease, giving the water greater penetrative action. It is also to be carefully noted that boiling water is in one important particular—its cleansing power—superior to all other heat-sterilisers. Whilst hot air and steam are powerful sterilising agents they have no cleansing action. They kill the germs but do not remove them. Boiling water, still more the alkaline sulution, not only destroys the organisms but actually removes them, together with all dirt and grease. Then there are other wound poisons, such as the products of micro-organisms and certain chemical substances not necessarily of bacterial origin, upon which simple heat has no effect, but which boiling water thoroughly cleanses away. The advantages of a boiling alkaline solution over the other heat-sterilising agents are so great that it is well to use it whenever it is practicable. There are two substances for which however it is altogether unsuitable, namely, catgut and sponge, both of them being destroyed by it.

Referring to the alkaline solution, it may be well to observe: (1) In order effectually to prevent the steel instruments from rusting, the water must contain at least 1 per cent. of the carbonate of soda. There is no harm in using a higher percentage, but it must not be less. (2) If the common crystallised carbonate of soda (washing soda), and not dried soda be used, it must be remembered that it contains seldom less than 60 per cent. of water of crystallisation, allowance must therefore be made for this by taking three times the amount of soda. (3) It is better to allow the water to boil for a few minutes before placing the instruments in it, so that the oxygen held in solution may be driven off. This still further reduces the likelihood of rust forming. An objection is frequently raised against the use of boiling water on the ground that it blunts the sharp edges of the instruments. In order to prevent this, it has been advised that the knives should not be boiled for more than a minute. The objection is founded on an error. It is not the boiling that blunts the knives, but the knocking them against each other. If this be avoided they can be boiled with impunity, as may be proved by examination of the edge under the microscope after boiling;* nor does the boiling affect the temper of the instruments, as has been supposed. In order to test this, I repeatedly boiled for many hours finely tempered watch springs, and submitted them to examination by a watch-spring maker, who was unable to detect any change in the temper.

There is yet another method of treating instruments, which has obtained some favour in France. I refer to the use of superheated water, or to boiling under pressure in an apparatus similar to Papain's digester. By this means the temperature of the water is considerably raised above 100° C., and in consequence the process of sterilisation is correspondingly quicker, but seeing that with simple boiling the time occupied is only five minutes, there is practically no advantage to counterbalance the cost and care of such an apparatus. I mention this only to set it aside as unnecessary.

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* Knives should never be placed in carbolic lotion, for even a diluted solution of the acid quickly impairs their edges.

Let us now turn from the discussion of the principles of sterilisation to a brief glance at some of the apparatus to be used.

Apparatus for the Sterilisation of Dressings by Steam.—We have seen that the best way in which we can sterilise our dressings is to expose them for half an hour to the action of pure steam at 100° C. As this is all that is necessary, the simpler our apparatus the more satisfactory are our results likely to be. Exception to the aseptic method is often taken on the grounds of the expensive and complicated apparatus which it is thought to require. No greater mistake could be made. Asepticism is simplicity itself compared with Listerism. All the apparatus requisite for carrying out an operation on strictly aseptic lines can be found in any household kitchen. A clean saucepan, some water, and a little washing soda is all that is absolutely necessary. With these we may quickly sterilise our instruments, drainage-tubes, and needles, silk for ligatures and sutures, and lint for mops and dressings. For some time past I have been using a common copper fish-kettle as a steam steriliser, at the bottom of which I put about an inch of water, having previously fixed the perforated fish-lifter or strainer about two inches above the level of the water. I place the kettle on the fire or gas-stove, and as soon as the water boils furiously, put my dressings, loosely wrapped up in a towel, upon the wire grating. The kettle is quickly filled with steam, which escapes from beneath the lid. After the lapse of half an hour the dressings are sterile. Here is nothing that is liable to get out of order; no fallacies can creep in; and yet every requirement is fulfilled. Of course a simple method like this has its limits. Whilst admirable for a small private practice, it is unsuitable for a hospital, where an apparatus is needed that will sterilise large quantities of dressings at a time. Of such apparatus there is no lack in the market. At present the great majority of them are of foreign manufacture (French or German), the English apparatus being, with few exceptions, mere imitations. From a large number of designs, I have selected for our consideration those which are typical of their class, and of the use of which I have had personal experience.

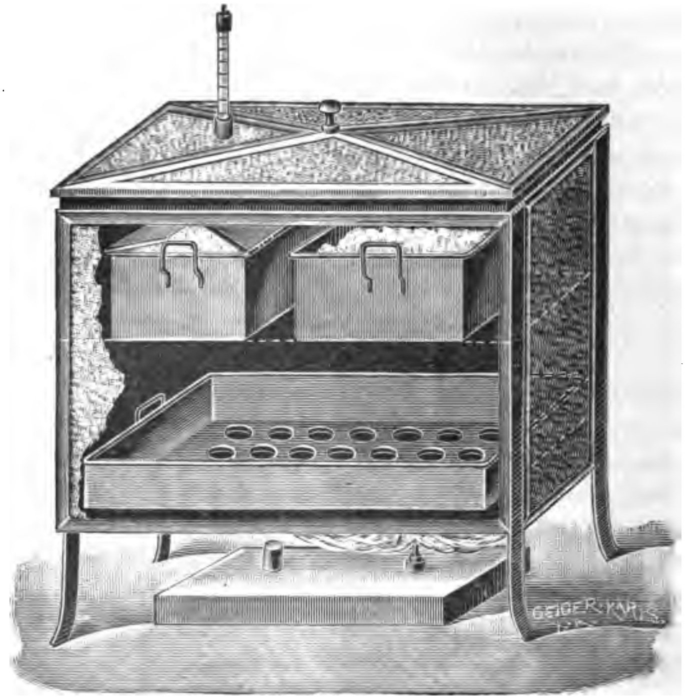

Fig. 1.

Fig. 1 is a sketch of an apparatus designed by Dr. Braatz, formerly assistant to Professor Czerny of Heidelberg. It consists of an oblong box of galvanised iron, which is heated from below by means of a spirit-lamp or gas. At the bottom of it is fitted a perforated metal tray for the reception of the instruments, if it be desired to sterilise them with the dressings. Above this is a perforated metal shelf, on which rest metal boxes (made of tinned copper so as to prevent rust) containing the dressings. The bottom of these boxes is perforated so as freely to admit the steam. (See Fig. 2.) Sufficient soda solution to cover the instruments is placed at the bottom of the vessel, and the lamp is then lit. The steam escapes from the top.* When the sterilisation is complete, the boxes are taken out, the lids shut, and the perforations at the bottom closed by means of a simple slide. Thus the dressings are protected against dust and re-infection, and can safely be carried any distance.

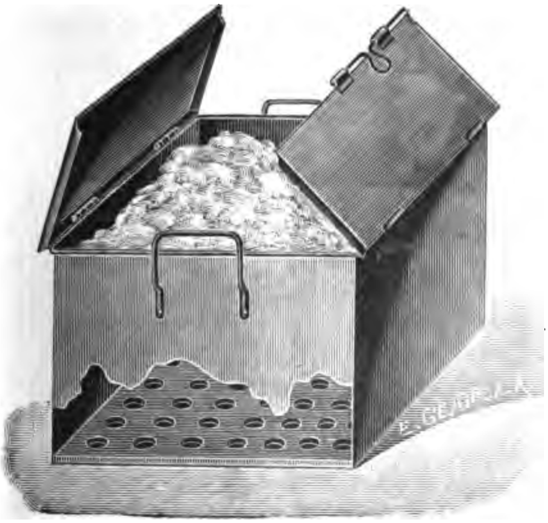

Fig. 2.

Fig. 3 shows a somewhat similar, though smaller, apparatus specially designed for ophthalmological work. As it folds together, it is easily transported.

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* This apparatus is made by Schmucker of Heidelberg, price £1 to £2.

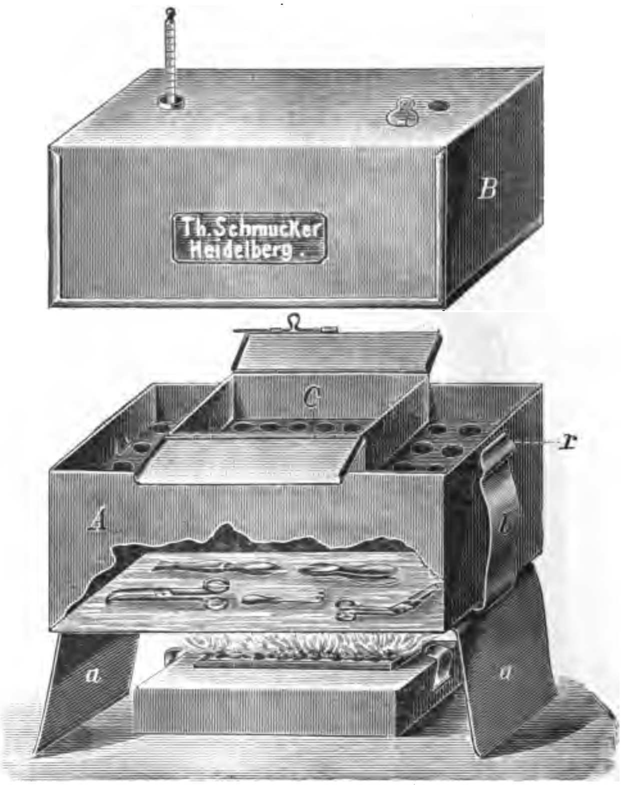

Fig. 3.

In Fig. 4 we have an example of an apparatus, in which the steam is admitted from the top. This is taken from the design of Prof. Merke of Berlin, and is the form used at the Moabit Hospital of that city, and now at the Queen's Hospital in Birmingham. The apparatus consists of two portions, A and B, the former is a wide-mouthed vessel standing upon iron supports, and serves the purpose of holding the water, which is brought to the boiling point by the gas-stove G. The upper portion B consists of two cylinders, one inside the other, the outer one being prolonged below in a conical manner to fit into the water-basin A. The inner cylinder C, in which the dressings are placed, is closed at the bottom, with the exception of the vent-pipe F; but communicates above with the space between the outer and inner jacket. The outer cylinder is closed by a

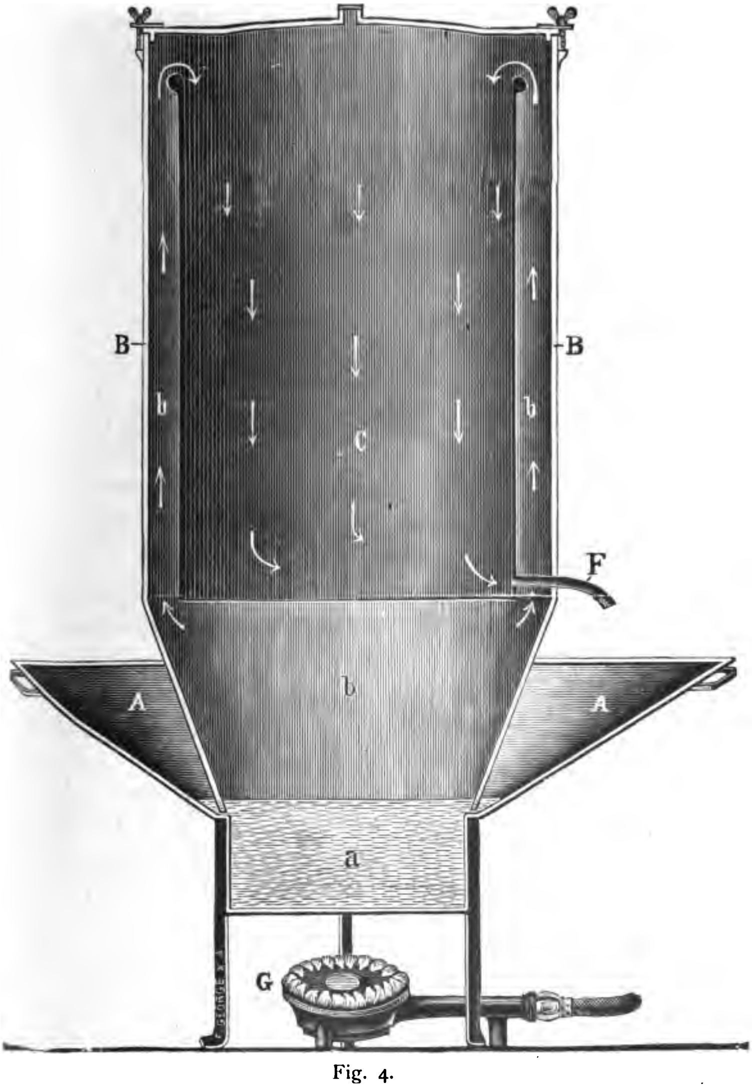

Fig. 4.

tightly-fitting lid, which is fixed by four thumbscrews. The steam given off from the water in A passes up between the outer and inner cylinders of B to the top, then downwards, permeating the dressings and escaping by the vent-pipe F. The apparatus is strongly made and works most efficiently.* In this case the dressings are placed either in round metal boxes, or, as Prof. Sonnenburg advises, in wicker baskets lined with calico (see Fig. 5). The advantage of the basket over metal cases is that it greatly favours the drying of the dressings, readily allowing the escape of the steam by diffusion. The same firm also makes a larger apparatus suitable for the sterilisation of bedding or clothing, see Fig. 6.

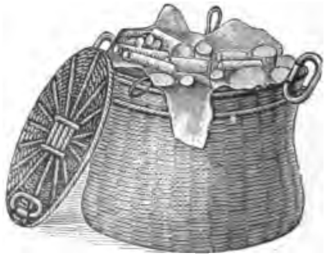

Fig. 5.

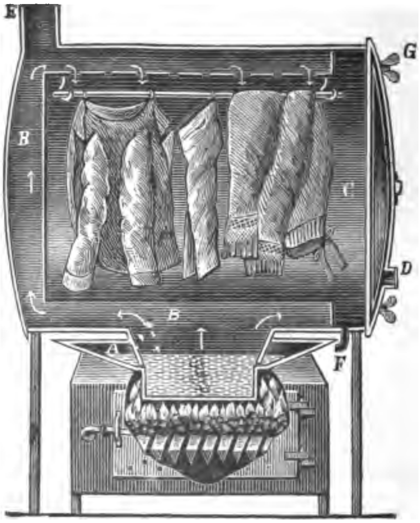

Fig. 6.

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* Cost, from £1 to £3 according to size; maker, Fehrmann, Birkenstrasse, Berlin.

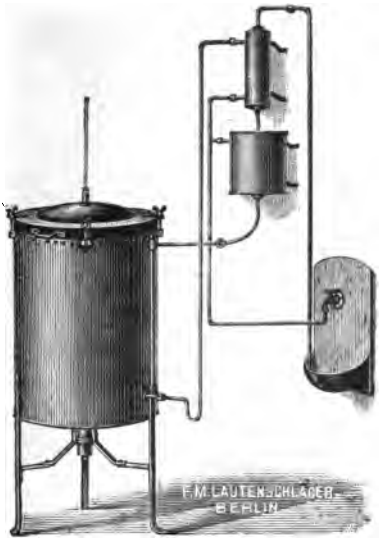

Fig 7.

The next apparatus to which I desire to draw attention is the one used in Prof. Bergmann's Klinik (Fig. 7). It is somewhat similar to that of Merke, but rather more elaborate, and, being made of copper, is therefore more expensive, the cost varying from £15 to £30. The distinguishing feature of this apparatus is that the water for the production of the steam lies between the inner and outer cylinders, and also that the waste steam, as it escapes from the vent-pipe, passes into a condenser, and thence returns as water into the outer cylinder. Special boxes, as devised by Dr. Schimmelbusch, for holding the materials to be sterilised, are supplied with the apparatus. As the illustration (Fig. 8) shows, there are holes, through which the steam

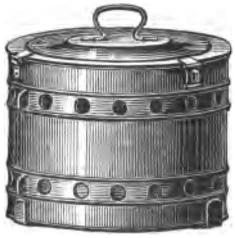

Fig. 8.

enters, which can be tightly closed after sterilisation. It is claimed on behalf of this apparatus that, before the water between the outer and inner cylinders comes to the boiling point, the contents of the inner cylinder are already warmed, thus preventing them from becoming damp through the condensation caused by the hot steam coming in contact with cold dressings. Personally, I attach but little importance to this; for I find that even in the case of the simple fish-kettle steriliser, already described, the dressings are not really wet, unless they are allowed to touch the sides of the vessel and so directly absorb the water from the condensed steam. It is true that immediately after being taken from the steriliser the dressings are slightly damp, but the water rapidly evaporates from the hot material, and in a few minutes the dressings are quite dry. Moreover, there is no reason why our dressings should be absolutely free from moisture when used, provided only that they are not sodden. Nevertheless it must be conceded that this apparatus works most efficiently, and, where expense has not to be taken into consideration, may confidently be recommended.* It is open to question whether it is not preferable to have several smaller sterilisers in the various wards, under the direct supervision of the surgeon, rather than one large steriliser for the use of the entire hospital, thus ensuring that each nurse shall be thoroughly conversant with the details of sterilisation.

Apparatus for the Sterilisation by Boiling.—Where a special apparatus is desired for sterilising instruments by boiling, Fig. 9 shows an extremely convenient form. The vessel is filled to the depth of an inch with alkaline solution, which is brought to the boiling point in about five minutes by means of a powerful gas-jet. The instruments are then laid on the tray, which is put into the boiling solution. There they remain for five minutes, after which they are ready for use.

Apparatus for Sterilisation by Hot Air.—So many reasons have been already urged against the use of hot air as a sterilising agent, that it is unnecessary to consider at any length this kind of apparatus. But for those who, nevertheless, prefer this method for any reason (and it may be noted *en passant* that the idea appears to be gaining favour that by its means catgut may efficiently be sterilised), I would mention the apparatus of Lautenschläger as being the best I have met with. (See Fig. 10.)

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* The maker of this steriliser is Lautenschläger, Ziegelstrasse, Berlin.

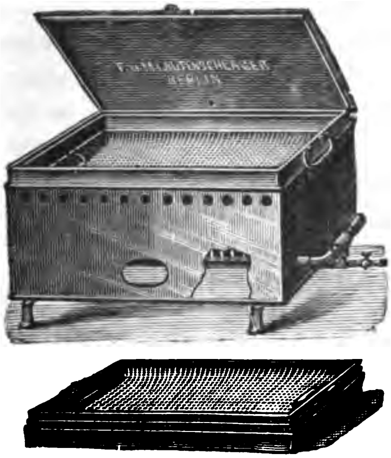

Fig. 9.

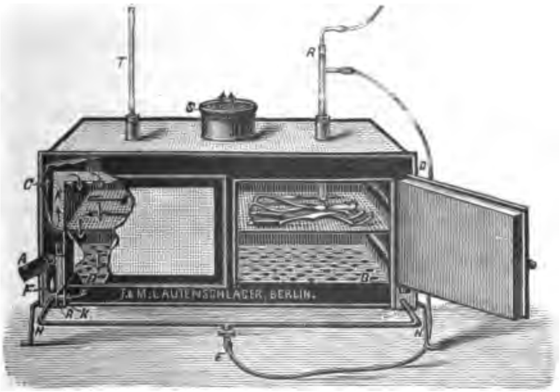

Fig. 10.

Here the sterilisation is effected by a current of hot air. The apparatus is heated at the side and not at the bottom, as is usual, so as to maintain as far as possible an equal temperature throughout. The illustration will show clearly both the structure of the vessel and its mode of operation.

I have thus endeavoured to present as briefly as possible the salient points in this method of wound-treatment; a method which still opens a wide field for discovery and adaptation, but which in its present state must be ranked as the most effective aid to the surgeon, by which he may evade the evil effects of bacterial activity that so greatly complicate and hinder healing processes.

REPORTS OF CASES.

◆

LYMPHO-SARCOMA OF THE TONSIL. REPEATED REMOVALS WITH VERY RAPID RECURRENCE.

BY W. CHARNLEY, M.D.
SURGEON TO THE EYE, EAR, AND THROAT HOSPITAL, SHREWSBURY.

THE following case seems worthy of record, both on the ground of its pathological and its clinical interest.

The patient, an old man of 73 years of age, came to the Eye, Ear, and Throat Hospital, Shrewsbury, complaining of difficulty of breathing and swallowing. This had been so for three months, he said. On examination, a spherical tumour, the size of a Tangerine orange, was seen, almost completely filling up the fauces. Its colour was, on the whole, dirty pink; but in parts it was ash-coloured, as if from superficial sloughing. It had a narrow pedicle. There were no enlarged glands; and the general health was not much affected, except that the patient was weak from lack of sufficient food, the growth causing great difficulty in swallowing.

On March 28th, 1895, preparations were made for the removal of the growth. A ligature of twine was first put on the pedicle, in view of the expected free hæmorrhage, my intention being to afterwards remove the growth with the galvano-snare. When the ligature was drawn tight, however, the tumour, to my surprise, came away at once. There was very trifling hæmorrhage, and in a couple of days the patient was apparently well. He was able to swallow easily and to breathe freely. On April 4th he was sent home to all appearance quite cured.

The tumour had the naked-eye look of a sarcoma, and of a rapidly-growing one. It weighed six drachms. Dr. Webb, of Ironbridge, was good enough to examine it for me with the microscope; and he reported that it was a lymph-sarcoma of a rapidly growing type with foci of necrotic tissue scattered through it. I was then fully prepared for its speedy recurrence; but I confess I was surprised when he presented himself again on April 27th with the tumour as big as ever. It again completely filled the fauces, and caused the same difficulty in swallowing and breathing as before. It was again removed; this time being merely torn off with the finger. It was effectually got rid of in this way, and again with very little hæmorrhage. On May 24th it had grown to its original size again, with the same symptoms; and on this date was cut off with a stout copper wire. This was found to be a simpler and less painful method than the former ones. He was again sent home relieved; but no doubt will come back soon with another recurrence. His general health remains pretty good, but these repeated operations must impair it in time. On this last occasion the tumour weighed five drachms. There seems to be no treatment beyond repeated palliative removals. There was little pain throughout. Tumours of the fauces of any kind are not common. The most frequent is the Lympho-sarcoma. Epithelioma is much rarer. The narrow pedicle in this case seems a point worthy of notice.

PERISCOPE.

◆

DISEASES OF THE DIGESTIVE SYSTEM.

(Concluded from the February Number)

Professor Moritz, of Munich, gave the results of his observations on the propulsion of food from the stomach, at the meeting of German naturalists and physicians, at Vienna, in September, 1894. These results may be shortly summarised thus:—

Water is very quickly passed on from the stomach into the intestine, about nine-tenths of the water ingested being thus disposed of within three-quarters of an hour. Aerated, acid, and alkaline waters, soup, milk, beer, and oil were all moved into the intestine much more slowly than pure water. This delay is in part due to the fact that the latter fluids provoke a considerable amount of acid secretion from the stomach glands, whereas water pure and simple produces hardly any acid gastric secretion. The author supposes that the acid secretion inhibits the motor efforts of the stomach. Soups, and foods of gruelly consistency produced a particularly strong acid secretion, and were, moreover, passed out of the stomach more slowly than might have been expected from their fluidity. Furthermore, the passage of water from the stomach was greatly delayed by the simultaneous ingestion of solid foods (carbohydrate and proteid).

Dr. Moritz further draws attention to these facts—viz.: That the quick extrusion of water from the stomach without the provocation of any strongly acid secretion must promote the absorption of poisons [probably chiefly micro-organic] introduced with drinking-water, and that the more highly intoxicating effect of alcohol, when taken without food, may be explained by the rapid progress of this material into the intestine as contrasted with its slower passage when taken together with food. [This does not appear to agree perfectly with the much slower elimination of beer from the stomach, as observed by Moritz, in comparison with that of water.]

At the meeting of 1893 the same author had equated his observations on this subject carried out on dogs in which a duodenal fistula had been made just beyond the pylorus. These results corresponded accurately with those now observed in man by removing the gastric contents at varying times after ingestion. Very little, if any, direct absorption even of pure water occurred from the stomach.

At the same Congress Professor Martius, of Rostock, described the results which he had obtained regarding the size and position of the stomach by means of the diaphanoscopic method. These results are: that the healthy stomach when empty always reaches as low as the umbilicus; when full it descends still lower. The lowest normal limit is indicated by a line joining the two summits of the iliac crests. In the erect position the limit descends further three or four centimetres. The enlargement when the stomach is filled is marked chiefly towards the right, and very great size of the stomach may be observed without any subjective disturbances. Martius further holds that morbid symptoms are entirely due to insufficient motor power of the organ, and that a low position of the inferior border is not sufficient to permit of the diagnosis of morbid changes in the stomach. He is of opinion, furthermore, that cancer of the stomach in the early stages cannot be diagnosed by diaphanoscopy, but that the exact seat of a growth of some size may be determined by this means.

Dr. Lasniée (*Progrès Méd.*, March 16, 1895) draws attention to papaine as a digestive ferment of great value in the treatment of most cases of disordered chemical function of the stomach. This vegetable enzyme resembles pepsin completely, excepting in the fact that it is capable of acting in neutral and even in feebly alkaline solutions. It has, further, the advantages of preserving its powers for a long time, acting with certainty, and when given in small doses; and of being devoid of the unpleasant taste and smell which renders many of the pepsin preparations intolerable to the patient.

Besides recommending the remedy for the indigestive troubles of adult patients, Dr. Lasniée advises its employment in conditions of infantile gastro-enteritis and all the diarrhœic conditions of common occurrence in children.

The preparations recommended by Dr. Lasniée are those made by M. Trouette-Perret, pharmaceutical chemist, of Paris.

Professor A. Pitres (in the *Progrès Méd.*, Dec. 29th, 1894) deals with the subject of hysterical borborygmi, which, though in the author's judgment due to a nervous condition, may well be dealt with in this periscope. Pitrès describes three forms of borborygmus or spontaneous gurgling sounds, due to the movements of gas and liquid in a confined space, as occurring in hysterical subjects. Firstly, irregular arythmical borborygmi, produced by motion or occurring as the forerunners of violent hystero-epileptic fits ; secondly, borborygmi audible during hystero-epilectic seizures; thirdly, rhythmical borborygmi, produced by the respiratory movements, ceasing when the breath is held, and occurring in hysterical subjects from time to time, independently of any convulsive seizure. It is with this third class that Pitres deals in his paper. The symptom is far from uncommon. The writer quotes a case reported by Lecorché and Talamon, and proceeds to mention two cases in his own practice. The common features of these three cases are the following :—

The patients were all young women, aged between 16 and 17, when they first came under observation, and enjoyed, apparently, good health. Beyond the inconvenience of the noise, they seemed unaffected by the borborygmus. All three were more or less neurotic, and two presented marked concentric contraction of the field of vision. In one of the girls this was the only symptom of hysteria, and her general health was excellent. The two others were the subjects of hystero-epileptic fits and other symptoms of unstable innervation. In one the mental condition was profoundly altered. The borborygmi in all cases came on suddenly, without warning, and ceased as suddenly. They were always greatly influenced by position, being generally less marked and often ceasing instantly when the patient lay flat on her back. The seat of production of the noise was always the left hypochondrium, with extension into the epigastric region. The end of the attack was signalised in each case by small eructations of gas, odourless and inoffensive, but in none of the instances quoted was there any general distension of the abdomen, though the epigastrium was occasionally rather prominent and over-resonant. Holding the breath stopped the noise, and volitional alteration of the respiratory act modified the degree and character of the sounds. In all cases the movements of fluid could be appreciated by the hand applied to the abdomen, and splashing sounds could also during the seizure be elicited by percussion. The attacks in one patient recurred at regular intervals daily, apparently without reference to the ingestion of food; in another patient the smallest quantity of food would bring them on; and in the third this point is not mentioned.

In all cases observed by Pitres this distressing symptom lasted for years and caused much unhappiness to the sufferers, and the author has found no treatment that will with certainty even palliate the condition, but appears to place his strongest hopes of success on the electric current and on psycho-therapeutic methods and hypnotic suggestion.

As regards the seat of production of these borborygmi Pitres suggests that they may originate either in the stomach or in the colon near the splenic flexure. Their following, in a good many cases, directly upon the ingestion of food seems to point to the stomach as their seat; on the other hand, it was easier experimentally to produce similar sounds in the cadaver by ligaturing the colon than by ligaturing the stomach. This question of seat of origin he feels unable to decide at the present time.

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

PATHOLOGICAL AND CLINICAL SECTION.

The sixth meeting, held in the Medical Institute on Friday, April 26th, at 8 p.m , Dr. MALINS in the chair.

Senile Gangrene of Foot; high amputation; recovery.—Mr. F. Marsh related this case. The patient, a man aged 62, was admitted into Queen's Hospital on November 16th, 1894, with senile gangrene of the left foot. No pulsation could be felt in the tibial arteries, and the internal saphenous vein was thrombosed up to the level of the internal condyle of the femur. The gangrene was slowly spreading, so amputation through the lower third of the femur was performed on November 23rd. Primary union was obtained, and the patient made a rapid recovery.

Recurrent Adenomata of Larynx; thyrotomy.—Mr. F. Marsh showed some large multiple adenomatous growths removed by thyrotomy from the larynx of a woman, aged 23, on April 20th. Twelve months ago he had removed similar growths by thyrotomy, and a microscopical examination showed them to be adenomatous. A month after the operation recurrence was noticed, and large doses of arsenic were given, which, for a time, seemed to have a beneficial effect. During the last six months the growths had slowly increased in size, and lately had caused much dyspnœa. Intra-laryngeal removal had not been attempted, both on account of the situation of the growths—chiefly below true cords in anterior commissure—and from want of self-control on the part of the patient. A long median incision was made exposing the upper rings of the trachea, which were divided and a rubber tube inserted for the further administration of chloroform. The thyroid cartilage was then divided, and the presenting portion of growth removed. Two small pieces of sponge with silk attached were then packed round the tracheal tube, to prevent the downward passage of blood, the rest of the growth was ablated, and the points of attachment cauterised with the actual cautery. The thyroid cartilage was sutured with silkworm gut, and a rubber tracheotomy-tube was left in the tracheal opening, in case of possible recurrent hæmorrhage—the bleeding having been troublesome during the operation. No complications however had occurred. The tube was permanently removed on the fourth day, and the patient was making a good recovery.

Melanotic Sarcoma of Liver.—Dr. Codd showed a specimen of melanotic sarcoma of liver, the growths breaking down and forming large cystic masses. The tumour was noticed eight months ago in the umbilical region, and since has gradually enlarged. There was some pain in the right flank a fortnight before admission. On admission the abdomen was much enlarged, being thirty-four inches in circumference at the umbilicus. A tumour occupied the whole of the front of the abdomen, which was completely dull except just above the pubes, and in the left flank one large well-defined projection near the umbilicus readily fluctuated. There was a larger but less defined mass occupying the epigastric region, and other cystic bodies in the right flank. Vaginal examination revealed nothing. The uterus not felt bimanually. Diagnosed as polycystic ovarian cyst, and abdominal section was performed by Mr. Hunt, and a smooth, dark-coloured cyst with large vessels on its surface presented. A small trocar was inserted and immediately blocked with grey shreddy material of which the cyst appeared to consist. Gall bladder found close to the pelvis on the under surface, and the tumour found to be in the liver. Abdominal wound closed, and patient died the next day.

The liver weighed 13 lbs. 10 oz., and contained about six large masses, readily fluctuating, and containing the grey semisolid material. Several small growths also were seen, from the size of a pea upwards, some black, others white, the former all showing a tendency to break down. Growths were also found in the heart, pancreas, right kidney, and right lung; the one in the heart involving the whole thickness of the right ventricular wall and softening. Subsequent enquiry showed that the left eye had been removed by Mr. Chesshire in 1890, for growth.

Extra-uterine Gestation.—Dr. Malins showed a specimen of extra-uterine gestation. The patient, æt. 28, had five children, the youngest 16 months old. She menstruated for the first time after this confinement in October last, again three weeks afterwards, and at Christmas time it recurred with violent pain, since which the discharge continued until she came to Birmingham on March 5th. There was then found a mass in the pelvis pushing the uterus to the left, and appearing above the brim. The abdomen was opened on March 6th. The space occupied on the right of the uterus was filled with recent clots; at the bottom of it was a fœtus six inches in length, and a flattened adherent placenta. There was profuse bleeding, a ligature was placed over the uterus, the space being packed with iodoform gauze, after being cleared out as far as possible, with the placenta. The patient lived thirty-two hours, dying from shock and exhaustion, attributable in great measure to the effects of a long railway journey on the day before the operation which evidently gave rise to bleeding inside the sac.

Uterus removed by Vaginal Hysterectomy — Dr. Purslow showed uterus removed by vaginal hysterectomy. The patient, aged 47, had been suffering from hæmorrhage and discharge for six months, and was rapidly losing flesh. There was a small malignant growth in the cervix; the uterus was free from adhesions. The whole organ was removed, the broad ligament being tied in sections with silk, and the ends of the ligatures left long. The last of these came away on the sixteenth day. The patient made a good recovery.

Patient after Thyrotomy for Laryngeal Papillomata.—Mr. Heaton showed a boy, aged 10, on whom he had performed thyrotomy for the removal of multiple papillomata of the larynx.

The boy had suffered from suffocative attacks of dyspnœa, with hoarseness and almost complete aphonia, for several years. A year previously tracheotomy had been performed for one such attack. Tracheotomy was performed and, a week later, the larynx opened. The trachea was plugged below with a sponge. Seven small papillomata and one large one, growing from the left false cord, were removed. The boy was shown, and had a very good voice, and had entirely lost all his dyspnœa. Mr. Heaton laid stress on the necessity of an external operation in such cases, partly owing to the small size of the larynx, and partly because it was the only way in which multiple small growths could be thoroughly and completely removed and their bases cauterised.

Extreme Dilatation of the Vagina in an Infant.—Mr. Heaton showed the pelvic organs of an infant, aged 6 weeks, who had died with a large pelvic and abdominal cystic tumour. The cyst, which was the size of a large melon, had the bladder attached to the front surface of it, the rectum behind, and communicated above with a small but dilated uterus. The uterine appendages, kidneys, and ureters were normal. The cyst caused death by retention of urine. The walls were composed of unshaped muscular tissue and elastic fibres, and were buried by stratified squamous epithelium. Mr. Heaton regarded it as an imperforate vagina which, owing to a chronic inflammation, had become greatly enlarged and distended. Such a malformation extremely rarely caused symptoms before the age of puberty, and rarely attained such relative proportions. The cyst during life reached up to the costal margin. The specimen was referred to a committee to examine and report upon it.

Angular Curvature of the Spine.—Mr. William Thomas showed a case of angular curvature of the spine occurring in a girl 18 years of age, in order to illustrate his method of treatment of angular curvature by the spinal vest. The vest consists of a splint of Swedish iron, strong enough to support the spine, but so soft that it could easily be moulded to any shape. It was formed of two narrow bars of iron which, when applied, rested on the articular processes of the vertebræ on each side of the spines, the bars being connected above and below by cross pieces. After being carefully fitted to the spine, padded, and covered, it was firmly sewn into a vest of stout jean fitted with eyelets in front, by means of which it could be firmly laced to the patient. He had used the vest now for several years, and claimed for it advantages over either the poro-plastic jacket or Sayres' plaster case. In the case shown, the patient had almost lost all power of movement in the lower extremities; but although she had only worn the vest about a fortnight, she could walk in it fairly well.

MIDLAND MEDICAL SOCIETY.

The eighth ordinary meeting of the Midland Medical Society was held on Wednesday, March 20th, the President, Mr. T. F. CHAVASSE, in the chair.

Dr. Leslie Phillips presented a man aged 30. Four years ago a squarish bald patch came on the occipital scalp upon which hair has never since grown and which is now hide-bound. Two years later, at the vertex appeared a round patch apparently of alopecia areata. The hair has grown here, but a curious ring of baldness exists around it on which pale-coloured hair is now growing. A similar horseshoe-shaped patch exists at the occiput and a band over the right ear; this latter gives the impression of partial adhesion to sublying tissue, and pressure here causes pain at the nape. In the right cheek is a vertical band of apparent sclerodermic infiltration. The disease was apparently circumscribed scleroderma simulating alopecia areata, and if this view of the case was correct the re-growth of hair on one patch was notable. The alternative, but less probable, diagnosis given was that morphœa and alopecia areata coexisted.

Violinist Palsy.—Dr. Short showed a man with violinist's palsy. The patient, aged 26 years, was a jeweller by trade, using his hands for fine work during the day, and for several years he had practised the violin in the evening. He first noticed a sense of numbness between the ring and little fingers of the left hand followed by weakness of the arm and hand so that he had to rest his elbow on his knee when playing. The marked features of the case were the absence of spasm or cramps, and the rapid wasting of the thenar, interosseous, and lumbrical muscles. He had been under treatment by massage and electricity for about two months with marked improvement in the muscular power of the hand.

Uterus from a Case of Hysterectomy.—Mr. John W. Taylor showed a uterus, the seat of malignant disease, which he had recently removed by Doyen's operation of vaginal hysterectomy. In this operation the broad ligament is secured by two pressure forceps with elastic blades, and a considerable portion of the ligament may be removed on each side of the uterus without danger of injury to the ureters.

Epithelioma of the Eyelid.—Mr. Wood White showed a middle-aged woman with a large fungating epithelioma of the left eyelid. The growth had invaded the outer half of each lid, and extended on to the cheek. It had been slowly growing for six years.

Dr. Douglas Stanley showed cultures, in various stages, of the Höeffler diphtheria bacillus.

Mr. Henry showed a number of mounted specimens illustrating injuries and diseases of the eye.

Dr. T. Nelson read a paper on "Some Points in Invalid Dietetics," in which he reviewed the possibilities of the kitchen in providing a more varied diet for those suffering from fevers, gastric and liver disorders, and other affections. He pointed out the usually perfunctory directions of the medical attendant, and gave examples of dietaries with methods of preparation of various food-stuffs, and concluded by urging some form of instruction in the principles of cookery for medical students as a necessary accompaniment of success in practice.

The President, Drs. Short, Stanley, Purslow, Johnstone, Kirby, etc., took part in the discussion.

KIDDERMINSTER MEDICAL SOCIETY.

Meeting held on February 8th, 1895, Mr. S. STRETTON in the chair.

Mr. J. L. Stretton read notes of a case of castration for enlarged prostate. The patient, aged 60, had for some months had difficulty in passing urine and, under advice, had been using a catheter, and during the last six weeks had not passed any urine except by catheter. On January 4th, 1895, when first seen, he was healthy looking. A No. 8 catheter entered the bladder easily. Per rectum, the prostate could be felt as large as a hen's egg. The right testicle was enlarged and nodular in places; the urine contained a considerable quantity of pus. In spite of regular washing out of the bladder, the patient did not improve, and on January 15th both testicles were removed by a single incision. Ten days later he passed urine naturally for the first time. On the 28th he passed eight ounces at one time. The wound was healed. He developed delusions and became very troublesome, and passed his urine in bed. This condition lasted for about a week or ten days, and he then began to improve. The prostate, three weeks after the operation, was much diminished in size. The report on the right testicle showed it to be tubercular.

Notes on a Case of Enterotomy.—H. N., male, aged 55. He had always enjoyed good health. The day before admission he was seized with pain in the abdomen after a meal of bread and cheese the previous night. He endeavoured to evacuate the bowel without success. He vomited constantly, and the vomit became fæcal. He had passed no flatus. Rectal injections—castor oil and opium—had been tried without effect. The abdomen was distended and board like, the pain not localised, and there was no particular tenderness. Pulse small and feeble, tongue dry, temperature normal, breath had a fæcal odour.

On opening the abdomen, there was evidence of slight peritonitis and a small quantity of fluid. The small intestine was much distended and congested. This was traced in both directions with a negative result. As the patient's condition was bad, a coil of distended intestine was opened and stitched to the abdominal wall. There was a copious discharge of liquid fæces. The following day he was much more comfortable, the distension had disappeared, and he had no pain, but his pulse was bad. During the next four days he several times became collapsed, and, in spite of free use of stimulants, he died in this state on the sixth day.

Post mortem twenty-four hours after death. The bowels were nearly empty. No cause for the obstruction could be discovered, and there were no signs of peritonitis. Mr. Stretton pointed out the difficulty of diagnosis in such cases, and maintained that the operation performed offered the best chance of recovery.

Mr. Bethune showed a large Fibroid about the size of a lemon, removed from a multiparæ aged 37, immediately after the birth of her ninth child. It was attached to the anterior uterine wall immediately within the cervix, and caused considerable obstruction to the birth of the child. It was ligatured and removed with scissors, and no bad symptoms supervened.

Mr. M. Johnston read a paper on "Malarial Fever."

Cerebral Abscess.—Dr. Evans read notes of a case of Cerebral Abscess, which he had operated on as follows:—Louisa P., aged 16. Admitted on October 11th, 1894. Always had fairly good health, no definite diseases, except the ear trouble which began two or three years ago without any known cause; it has since "run matter." One month ago, whilst the patient was at work in a mill, she was suddenly seized with a "fit," in which she remained insensible for two or three hours. The left side of the face, the left arm and left leg twitched during the fit (this was corroborated by the medical attendant), since this time she has been laid up. The headache began three or four months ago and has been "on and off" ever since, but after the fit and since it has become worse. The right internal strabismus has come on since the fit. She has been peculiar and strange in her manner for about two years. Bowels regular, has only menstruated once, about two years ago. Mother has been in a lunatic asylum twelve years, also the mother's brother. The mother has had several children, but no miscarriages. Some of the patient's brothers are considered "queer" by the neighbours.

On admission.—Patient appears to have lost flesh, lies on the right side, takes no interest in her surroundings, not as a rule speaking unless spoken to, will then answer intelligently, but cerebration is slow. She is very drowsy (but this is probably due to the bromide she has taken). Pupils both widely dilated, equal and react to light and accommodation. She states that sometimes she sees double with the right eye. Her expression varies sometimes, her face expresses pain, at other times there is a far off dreamy look about the eyes. She complains very much of pain in the frontal region, also of shooting pain down the right, and sometimes in the left arm. The pain in the head is always worse at night, and she often cries for sometime with it. There is no loss of power in any of the limbs, and sensation is normal. The plantar and knee reflexes are absent, no ankle clonus. Well-marked optic neuritis in both discs, but the sight is normal, with the exception of the double vision already mentioned. Senses of smell and taste are normal. There is a slight discharge from the right ear. A few drops of thin pus in twenty-four hours, and this has remained the same since the first onset, according to the patient's statement. She hears the tick of a watch one yard off the left ear, but cannot hear it when placed close to the right ear. When placed on the skull in the region of the right ear she can hear it. Temperature normal, pulse 72. All the systems otherwise are normal. To-day she was sick for the first time since admission, but it was directly after the medicine; organic reflexes are normal. There is no swelling, redness, or tenderness over the mastoid regions. Has no delusions, illusions, or hallucinations. A perforation of the right tympanum was discovered on examination of the ear.

Eight days after admission she vomited two drachms of clear fluid; pain in the head and left arm continued severe. Seventeen days after admission she suffered from illusions, thought the nurses were black. These continued for two or three days, together with severe pain preventing sleep at night. Hypodermic of one-sixth of a grain of morphine relieved these symptoms. Loss of power in the left arm gradually supervened, and much difficulty was soon experienced in getting her to take nourishment, and she gradually became drowsy and semi-comatose.

On November 3rd a consultation was held on the patient, and it was decided that she was suffering from cerebral abscess, probably in the temporo-sphenoidal lobe, and that an attempt should be made to evacuate its contents.

The patient was accordingly anæsthetised with chloroform, and a semilunar scalp-flap dissected down over the region of the lower part of the right fissure of Rolando. The periosteum having been raised from the bone, the trephine was applied over the region of the motor centus for the face, and on the dura mater being exposed, the brain was seen to bulge into the wound, but there was complete absence of brain pulsation. The dura mater was opened by a crucial incision, and the brain substance probed in several directions with a fine aspirating needle. The needle was eventually introduced in a forward direction for a distance of about two inches and a half, when pus was seen exuding from the end of it. The abscess cavity was then aspirated, and about three ounces and a half of very offensive pus was evacuated. The opening in the brain was then enlarged by means of a long sinus forceps, introduced by the side of the needle, and the little finger was passed apparently into the abscess cavity. A small drainage-tube was next passed down to the bottom of the opening, and the parts well washed out with boracic acid solution. The semilunar flap was replaced, and fastened in position with sutures, an opening being made in its centre for the passage of the drainage-tube. There was free bleeding from the scalp, which was stopped with pressure.

After the operation the patient was at first very restless, crying out with pain in the head and moving the right arm. The restlessness continued through the night, gradually subsiding towards the morning, when she seemed fairly comfortable and inclined to sleep, taking her nourishment better. The wound was dressed the next day. There had been a good deal of oozing.

On the second day after the operation the note was that the patient had been drowsy the greater part of the night, after a hypodermic of one-eighth of a grain of morphine, and had taken six ounces of milk, one ounce of brandy, and some Valentine's meat juice. This morning she looked bad—dusky complexion. Pulse, 168, weak; respiration, 40; temperature, 100·2° F. Had coughed several times during the night. After this the patient gradually became comatose, and died on the morning of November 7th, the fourth day after the operation. Previous to the operation the temperature was never above normal.

On making a *post mortem* examination, an abscess, the size of a large hen's egg, was found occupying the right frontal lobe. The abscess had a well-defined wall about one-eighth of an inch thick, and in it was found the opening that the aspirating needle had made, but no other opening.

Dr. Evans considered that there were several points of interest connected with the case. In the first place, as to the cause of the abscess, he could only suppose that the condition must have arisen from the ear disease. It seemed to him strange that this abscess should be situated in the frontal lobe, so far from the seat of the original trouble; but in the absence of any history or signs of syphilis, tubercle, or other disease, he could attribute the abscess to nothing else.

The symptoms were not very pronounced, at all events at first. The loss of power in the arm and leg was not at all well marked, and the headache was only severe at times. Of course there was the history of the fit, a solitary one, followed by a slight squint, though the optic neuritis was well marked all the time the patient was under observation. There was very little vomiting, and, later, some mental disturbance, as evidenced by illusions and hallucinations, but otherwise the faculties and intelligence of the patient seemed little disturbed. It seemed curious that so large an abscess—which, judging from the thickness of its wall, must have been in existence for some time—should have produced such a comparatively small amount of trouble. The diagnosis of the case, too, was thus rendered somewhat difficult; and the fact of the mother and uncle being insane was misleading.

Dr. Evans stated that in future operations he should use an aspirating needle to search for the abscess, as in this case; but having struck the abscess, he would pass a sharp-pointed bistoury down the side of the needle, in order to make sure of opening the wall, and so allowing a free escape for the matter.

In the discussion which followed, it was suggested that had the operation been performed sooner, the patient would have had a better chance of recovery.

Dr. Evans also showed a case of a man who had fallen from an apple tree and sustained a compound fracture of the thigh, the bone projecting through the trousers, and considerable injury to the shoulder, probably fracture of the surgical neck of the humerus, with fracture of the acronion process and of the neck of the scapula. At the time the patient left the hospital he could walk with the aid of a crutch, and there was about three-fourth-inch shortening of the injured leg. He could move his arm in almost any direction, placing his hand on his head without difficulty.

Dr Evans showed a uterus he had removed per vaginam for malignant disease, having first ligatured the round ligaments, through an abdominal incision. The patient died of shock about twelve hours after the operation.

REVIEWS.

THE DYSPEPSIA OF PHTHISIS.*

THIS volume of 200 pages contains a very complete, accurate, and lucid account of the subject treated. Perhaps the most valuable portion is the first two chapters which contain an able survey of the pathology of the condition, in which field Dr. Fenwick has himself done much work both experimentally and in the *post mortem* room.

We read with great interest and pleasure the chapter on the dyspepsia of strumous children. This peculiar form of gastro-enteric catarrh we all recognise in a vague sort of way; but Dr. Fenwick has written so clearly and comprehensively concerning it that the condition stands out in bold relief, the clinical symptoms especially being described with happy accuracy.

But the author himself would, no doubt, tell us that the *raison d'être* of his book lay in Chaps. v. and vi., on "A Form of Dyspepsia which often Precedes the Development of Pulmonary Tuberculosis," and on another variety which usually ushers in and accompanies the first stage. He believes that there is a dyspepsia more or less *sui generis* which often helps to induce phthisis. His words are: "I am quite convinced that there does exist a variety of dyspepsia which is peculiarly apt to be followed by pulmonary tuberculosis, and have little doubt that everyone who has had much experience either in pulmonary or gastric diseases will endorse this opinion." We do not ourselves feel able to give this endorsement, though Dr. Fenwick says much in its favour. Our belief is rather that people who have inherited a phthisical predisposition are apt to suffer from a dyspepsia which is peculiarly modified by the same predisposition which encourages the inroad of the bacilli of tubercle. The phthisical inheritance is the cause both of the peculiar dyspepsia and of the peculiar pneumonia. In speaking, too, of this precedent dyspepsia, we must never fail to remember that signs of pulmonary phthisis not seldom exist some months before any lung symptoms arise; and, further, it cannot be doubted that bacilli may have been at work a month or two before the pneumonia they set up has afforded the physician any signs for definite diagnosis. This dyspepsia may thus be one of the symptoms of the *latent period* of pulmonary tuberculosis rather than altogether antecedent to infection. However, sometimes it is no doubt a true antecedent and, by weakening an already predisposed individual, renders him still more easy a prey to bacillary attack.

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* The Dyspepsia of Phthisis. By W. Soltau Fenwick, M.D. Lond., M.R.C.P. London: H. K. Lewis.

We heartily congratulate Dr. Fenwick on having brought to so successful an issue a work which is evidently the outcome of much pains and steady investigation, and we commend it to all those who desire a larger and clearer view of the intimate connection of phthisis and dyspepsia.

THE TREATMENT AND EDUCATION OF MENTALLY FEEBLE CHILDREN.

In the treatment and education of mentally feeble children, Mr. Fletcher Beech gives a very short *résumé* of the most prominent mental and physical characteristics met with among idiots and imbeciles, and briefly outlines the treatment which his large experience has taught him to be the best for these unfortunate children.

In the section on treatment, we notice that "meat should be excluded from the dietary of children suffering from epilepsy," though eggs are allowed; and on page 25 we gather that it is the author's opinion that diet has some perceptible influence on epilepsy. It would have been interesting had Mr. Beech given some statistics or detailed observations on this somewhat doubtful point, and had he told us whether any permanent effect on the epileptic tendency can, in his experience be secured by this means.

The writer's opinion of the curative effects of craniectomy is not high; and in such a place as Darenth Asylum Mr. Beech will have had better opportunities of studying the remote results of this operation than most hospital surgeons have.

We are glad to see that Mr. Beech is strongly in favour of treating all mentally feeble children in institutions, *i.e.*, in company with others of the same mental capacity as themselves.

The pamphlet is useful, especially to those who may have to deal with individual cases of imbecility; and here, again, its utility will be mainly in pointing out the line of education which should be pursued.

THE EXTRA PHARMACOPŒIA FOR 1895.

THIS book is so well known that it hardly requires recommendation at the hands of a reviewer. The present volume, like its predecessors, supplies an immense amount of information. The indices are perfect in arrangement, and are of the greatest help to the busy practitioner.

We wish specially to direct attention to the very fully written chapter on antitoxins, which shows what is at the present time being done in this branch of therapeutics, and gives information as to where the antitoxic preparations may be obtained, and wherein those from various sources differ among each other. The literature on this subject is exhaustively referred to.

Among the test-solutions we notice the omission of phloroglucin-vanillin as a test for free hydrochloric acid.

ATLAS OF THE NASAL CAVITY AND SINUSES.*

THIS Atlas consists of sixteen plates engraved by Matoloni, of Vienna, from photographs of sections carefully prepared and selected to display the relations of the nasal cavity and its accessory sinuses with neighbouring structures.

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* The Anatomy of the Nasal Cavity and its Accessory Sinuses. An Atlas for Practitioners and Students. By Dr. A. Onodi. Translated from the second edition by St. Clair Thomson, M.D. Lond., F.R.C.S., M.R.C.P. ondon : H. K. Lewis. 1895.

The utility of the work has been increased by Dr. St. Clair Thomson, who has considerably enlarged the explanation which faces each plate. The engravings are excellent, and, more important still, are true to nature. The book is one that can be commended to all wishing to acquire a practical knowledge of nasal anatomy.

FROTHINGHAM'S LABORATORY GUIDE.

Mr. Frothingham's Laboratory Guide for the Bacteriologist is a useful little book for those who are already acquainted with the principles of the microscopic examination of bacteria, and who may wish to have ready at hand a list of the main staining and chemical agents required in such manipulations. Mr. Frothingham gives useful hints about time-saving and about the arrangement of a laboratory, all of which may be recommended. The two plates are good. The book is written mainly from the point of view of a veterinarian.

CORRECTION.

In our review of Schimmelbusch's Aseptic Treatment of Wounds, the word "antiseptic" was, by mistake, substituted for "aseptic."

New Inventions, Drugs, etc.

SPECIMENS RECEIVED.

From Messrs. Burroughs, Wellcome, & Co., specimens of Residuum Rubrum, Thymus Gland, Dried Sulphate of Iron, Zymine, or pancreatic extract and permanganate of zinc, each *in* tabloid form.

From Mr. W. A. Manning, Wylde Green, a specimen of Bronchi-fume, a powder to be ignited and inhaled for the relief of asthma. The composition of this remedy has been communicated.

From Messrs. DOMEIER & Co., London, samples of Lactophenin and of Ferratin, the former an antipyretic, and the latter an organic iron-compound, prepared synthetically. Both these preparations are manufactured by Messrs. C. F. Boehringer and Sons, Waldhof, near Mannheim.

New Books, etc., Received.

The Surgical Diseases of Children and their Treatment by Modern Methods. By D'ARCY POWER, M.A., M.B., F.R.C.S. Illustrated. London: H. K. Lewis. 1895.

Lecture on Diseases of the Spinal Cord. By Dr. PIERRE MARIE, Deputy Professor at the Faculty of Medicine of Paris, Physician to the Hospitals. Illustrated. Translated by Dr. Montague Lubbock, F.R.C.P. London: New Sydenham Society. 1895.

Medical Handbook of Life Assurance, for the use of Medical and other Officers of Companies. By JAS. EDWARD POLLOCK, M.D., F.R.C P., and JAMES CHISHOLM, Fellow of the Institute of Actuaries. Fourth edition. London, Paris and Melbourne: Cassell and Co. Ltd., 1895.

A New Method of Inhalation for the Treatment of Diseases of the Lungs. By W. H. SPENCER, M.A., M.D., M.R.C.P., Consulting Physician to the Bristol Royal Infirmary. London: The Scientific Press Limited. 1895.

On the Relation of Diseases of the Spinal Cord to the Distribution and Lesions of the Spinal Blood-vessels. By R. T. WILLIAMSON, M.D., M.R.C.P., Medical Registrar at the Manchester Royal Infirmary. London: H. K. Lewis. 1895.

The Extra Pharmacopœia. By WM. MARTINDALE, F.C.S.. and W. WYNN WESTCOTT, M.B. Eighth edition. London: H. K. Lewis. 1895.

A Manual of Gynæcological Practice for Students and Practitioners. By Dr. A. DÜHRSSEN, Privat-Docent in Gynæeology in the University of Berlin. Translated from the Fourth German edition by John W. Taylor, F.R.C.S., Surgeon to the Birmingham Hospital for Women, and Fred. Edge, M D., F.R.C.S., M.R.C.P., Surgeon to the Wolverhampton Hospital for Women. Illustrated. London: H. K. Lewis. 1895.

The Treatment and Education of Mentally Feeble Children. By FLETCHER BEACH, M.B., F.R.C.P, London; J. and A. Churchill. 1895.

The General Hospital, Birmingham. Statistical Report of In-patients for the year ending December 31, 1894.

The Sick Poor in Workhouses. Reprinted from the ***British Medical Journal***, with an Appendix of Summaries and Comments by ERNEST HART, D.C.L. Second series. London: Smith, Elder and Co. 1895.

Indurative Mediastino-Pericarditis. By THOMAS HARRIS, M.D., F.R.C.P.. Physician to the Manchester Royal Infirmary, etc. Reprinted from the *Medical Chronicle*. London: Smith, Elder and Co. 1895.

Report of the Council of the Dublin Sanitary Association for 1894, with the President's Address. Dublin. 1895.

Derby Borough Asylum. Sixth Annual Report. 1894.

Year-Book of the Scientific and Learned Societies of Great Britain and Ireland. Compiled from Official Sources. Twelfth Annual Issue. London: Charles Griffin and Co. Limited. 1895.

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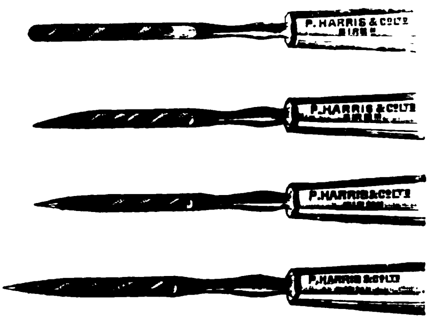

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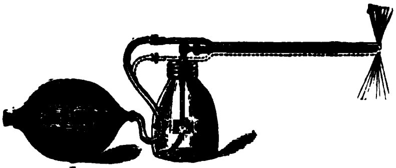

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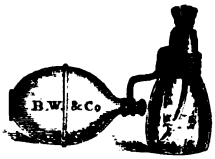

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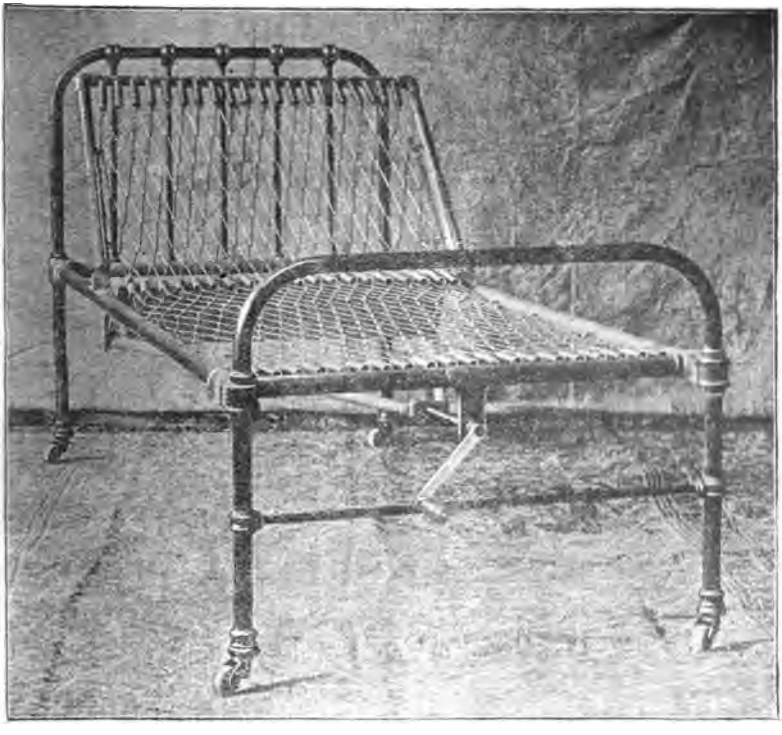

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NOTE TO 1895 EDITION.

THE gratifying manner in which the first edition was received, and the numerous valuable suggestions made us from various quarters, have enabled material improvements to be introduced in the issue of 1895.

Briefly:—(1,) The paper has been slightly thickened: and there have been added, (2,) Two Pockets; (3,) A Cash column to each page; (4,) Two Cash leaves to each month; (5,) Pages for Vaccination Engagements; (6) A Purse Fastener, which will be found more readily handled than the old fashioned tuck; and other minor additions.

Extracts from Press Notices of the First Edition.

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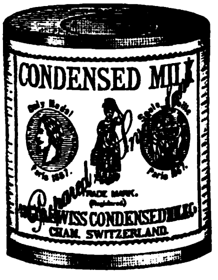

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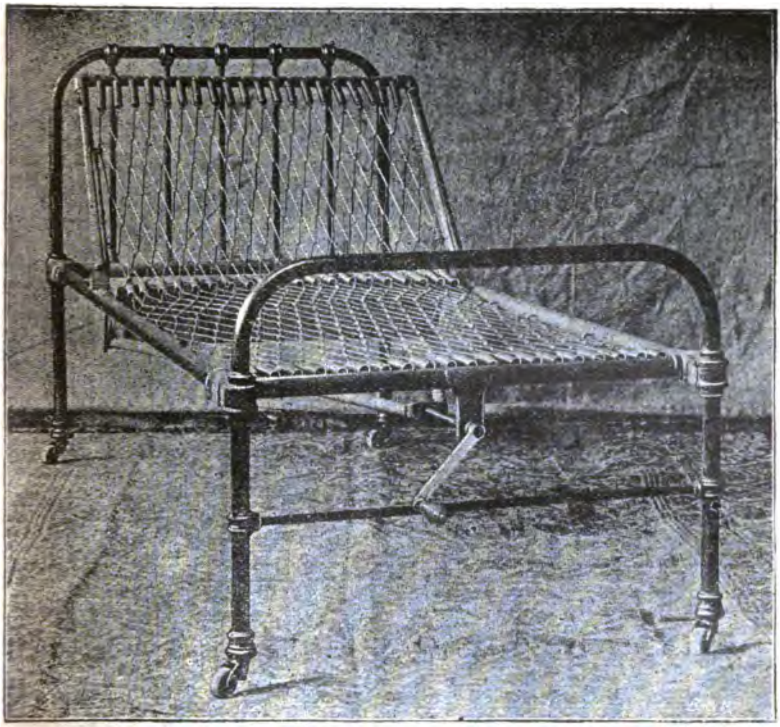

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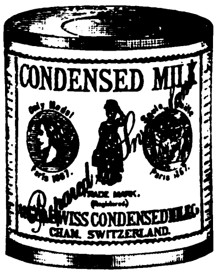

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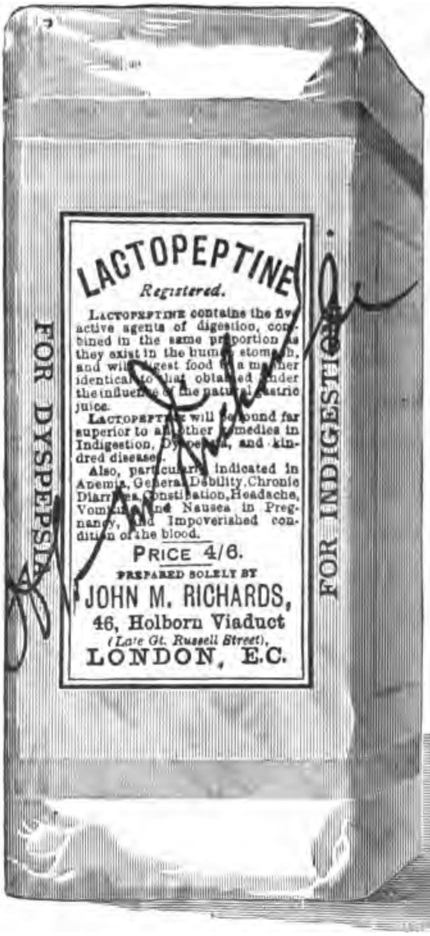
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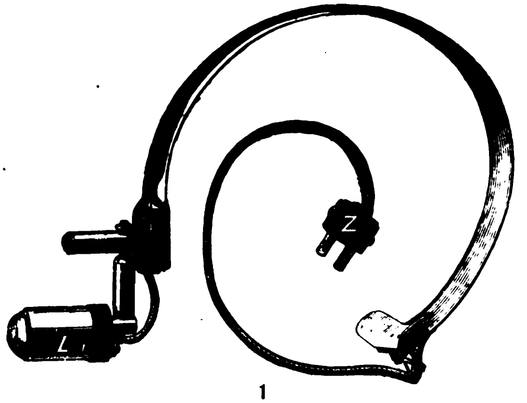

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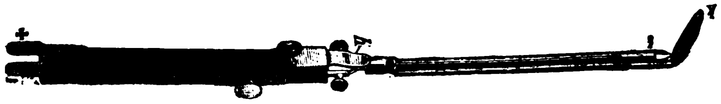

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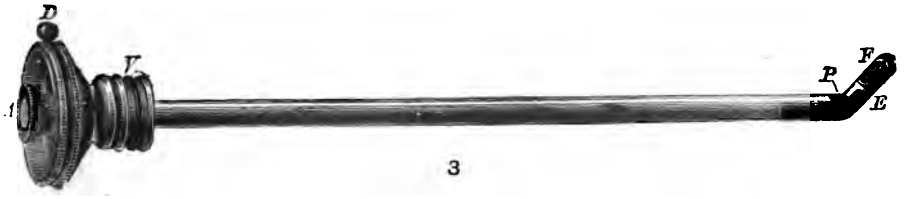

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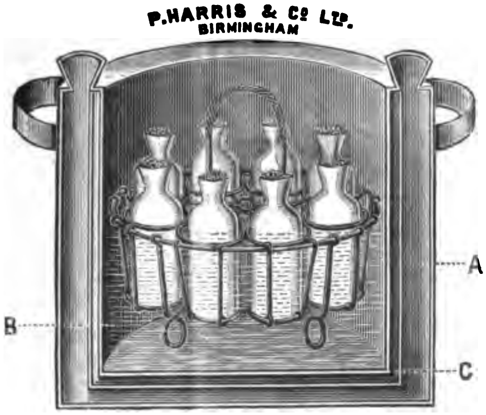

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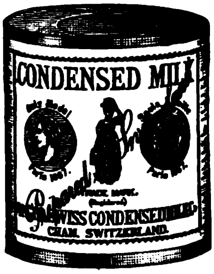

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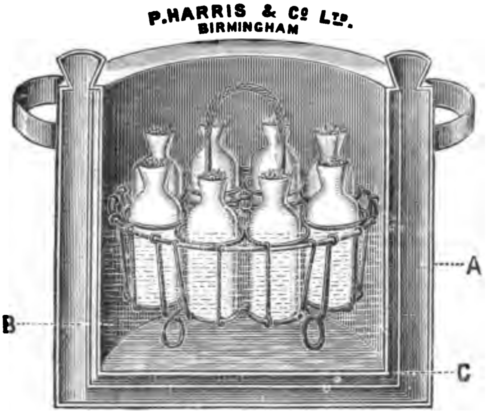

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